

# Papers Presented During The Panchkula Urban Dialogue 2022

# A VISION FOR METROPOLITAN AREA DEVELOPMENT

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## Abstract

The idea of metropolitan or regional development is not new in India; it has been tried in multiple places and at different times. However, some critical pieces have been missing in the models of the past. These critical missing pieces include a) due respect for the region and its heterogeneity, b) disregard for local democracy, c) lack of conversation across institutions and jurisdictions, and d) concern for equity and sustainability as opposed to a single-minded focus on growth.

Can the PUD be an opportunity to reverse some of these historical legacies? Such an aspiration calls for institutional and process design that will hold an explicit commitment to growth with concomitant respect for heritage, equity and sustainability.

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## Metropolitan Development: The idea and its operation

The idea of metropolitan development is neither new to the world nor new to India. There are undoubtedly several reasons for which metropolitan development authorities are a need of the hour. The most important of these is the emergent pattern of urban development in the country, viz. a clustered growth that takes the form of corridors, larger clusters, outgrowths, and extensions that do not respect administrative jurisdictions such as city boundaries, district, or even state boundaries. We also have ample evidence that suggests that inadequacies of policy response result in unregulated and unhindered growth in city peripheries that

not only impact the quality of life in the present but often create barriers for future development. Such growth demands a policy response that does not just direct the geography of growth, but also provides critical infrastructural needs, services, impetus for a good quality of life for citizens, and guides development towards sustainability. It is what spurs the institution of metropolitan development authorities – institutions that would foster new developments, guide them, and shape them. The experience of how these authorities work has, however, been disappointing.

Since the institution of the Delhi

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Development Authority (DDA) in 1957, various states have created multiple models of metropolitan development authorities. There are about 59 different urban development authorities in the country with organizational forms ranging from improvement trusts to urban development /metropolitan development/regional development authorities to infrastructure development authorities. These models are built around certain ideas, the core of which include a) acquisition or planning control over a much larger area around the city/multi-jurisdictional area, b) generating room for the city and its activities to grow in the future, and c) orderly regional development. A perusal of the performance of these authorities reveals that the idea of orderly regional development actually receives the short shrift. In most cases, the city is the driver of the development while the region becomes the arena in which city dynamics are given more room to play out.

Metropolitan development authorities are also seen to fall short on several other parameters. With their single-minded focus on developing lands and creating revenue streams, many of them lose sight of their planning function. Interestingly, while they are born out of the need for convergence, they are unable to converge effectively for infrastructures that demand convergence, such as developing public transportation grids, or for developing shared infrastructures such as common waste treatment plants or sanitary landfills. The need for developing social and soft infrastructure that enables the creation of communities, encourages creative energies and fosters resilience for coping with crises is often missing. Similarly, the thought of creating greater opportunities for the region through the evolving city growth is paid inadequate attention. The institutional design of metropolitan development authorities is undemocratic, relies overly

on the expert and the bureaucrat, and does not give any place to the citizen's voice. The 74th Constitutional Amendment had provided for a template for regional governance that gave space to elected representatives from the jurisdiction; that does not seem to have found favour with multiple state governments.

The operation of metropolitan and regional development authorities is, thus, an area of deep concern, especially as we move forward to a more urban future in an era of new global challenges and opportunities. There is an urgent need for a fresh approach to the idea of metropolitan governance.

### **Reframing the goals of metropolitan development**

The idea of metropolitan development has to begin with the definition of the metropolitan area with clarity about the present footprint, and how it is likely to grow in the future. It also needs to have clarity about the nature of these footprints, which of these can be guided and require correction, which of these require improved infrastructure, and which are the areas of potential growth. The mapping of natural and environmental resources, including forests, water bodies, and biodiversity is a must and should provide a script for conservation and future development. Similar mapping of communities and traditions in the region can go a long way in the nurturing and revival of practices that hold communities together.

Convergence has to be a key principle of new growth strategies. Rather than focusing on land development alone, the new metropolitan development authority should focus on creating transport infrastructures and enabling grids for easy cross-connecting commutes between growth

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nodes at all points in the geography. Enablement of such grids includes not just the construction of infrastructures but creating templates for their operation via new institutions, cost-sharing, shared revenues, future maintenance and growth. Other shared infrastructures and resources need to be made a priority as well.

Social equity and inclusion often take a backseat in discussions of development with the assumption that any growth opportunity eventually trickles down to all. Experience in development shows that this is not necessarily true. Hence, deliberate efforts to bring vulnerable areas and communities into the mainstream and evolving models of sharing benefits of value addition to the region with them are necessary. Rather, they should be made part of the DNA of the institution. An indicator of inclusive growth should be making local communities become co-beneficiaries and shareholders of development.

The emergent reality of climate change impresses the need to no longer take environmental resources – water and food for the city(ies) for granted. One needs to also take into account the possible impacts that extreme events can cause in a particular region. The COVID pandemic also brought home the fragilities of cities generated by the global interconnections. These realities can no longer be pushed out of sight as future priorities, and thus, mitigation and coping need to be taken cognizance of, even in growth strategies by creating resilient or climate-proof infrastructures. Our regional traditions are often a wealth of good environmental management. This knowledge coupled with technological and social innovations can go a long way towards the achievement of these goals, which otherwise seem improbable.

## **For a Democratic Institution**

Experience reveals that different institutions of the State in India are highly competitive and engaged in protecting their turfs rather than collaboration. A key principle for evolving a good metropolitan development authority, particularly one that governs a city like Panchkula – part of a tri-city growth trajectory, with different state boundaries – requires an approach that is able to transcend competition and create convergence. For such an institutional template, a leadership that can move beyond narrow interests, has a larger vision and ideas for convergent projects is necessary. However, such a vision also needs to be shared by officials down the line. It demands a spirit of listening and keeping an ear to the ground.

One of the most effective ways of keeping an ear to the ground is embedding the culture of citizen consultation and citizen voice in the institution. Thus, the institution needs to go beyond legalistic requirements of mandated participation for particular sanctions and objections to a proactive mode of participation. Such participation may include periodic citizen assemblies at various scales, incentives for small projects, celebrations of hackathons, competitions and festivals, and enablement of technology-facilitated transparency and grievance redressal channels. Participation of this nature succeeds when institutional leaders are committed to the cause.

Democracy via space for people's representatives is a must as it builds in a much-required system of checks and balances. This can prove a challenging proposition in a multi-state entity, however,

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a system for inviting jurisdictional nominees can be instituted.

## **Conclusion**

Metropolitan development authorities are a must to cope with the emergent challenges of urbanization and to maximize the opportunities therein. The operationalization of this concept has been fairly disappointing so far, with deficits in vision, performance, as well as participation. The fervent hope is that PMDA models itself along these lines and emerges as a metropolitan development authority of the new age.

# PMDA THROUGH THE LENS OF SUSTAINABLE DEVELOPMENT GOALS AND WHAT NEEDS TO BE DONE

Mr. Vikas Verma  
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When we are talking of PMDA, we need to keep in mind that we are not just talking of an urban area defined under Panchkula. We should be talking about Panchkula along with all of its regional neighbours, and it will have an impact not only on them but whatever they also decide to do will have an impact on Panchkula as well. So, it can not be in isolation. It has to be together.

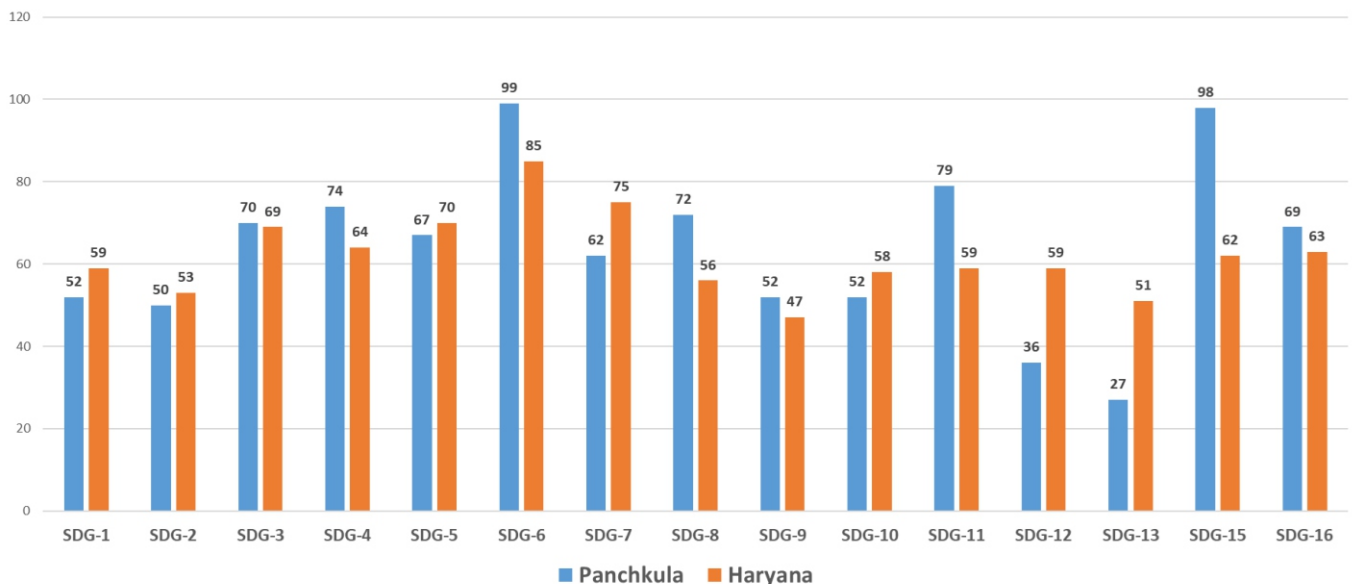
One of the key points that we learned in the Chandigarh consultation was precisely this - we cannot sit alone and decide. It might open up the way for even Mohali to start thinking of coming together of all the three cities and administrators sitting together to decide how do we offer a better quality of life for the people without giving consideration to the political boundaries.

The good part about Panchkula is that it is already focusing on Sustainable Development Goals, which is part of the different schemes. Sustainable Development Goals is the cornerstone with which the government of Haryana is defining its work, and it is doing wonderfully well. It has improved a lot and many new things have emerged from there. Sustainable Development Goals is a very important part, and it is also the lens and the framework from which Panchkula should also look at its own new definition and where does it want to go. Looking at the SDGs gives a very good perspective as to

where are the areas that couldn't be ignored, which areas the government should tighten up, and so forth.

In SDG coordination Centre in Haryana, we had done the District Indicator Analysis and we have brought out the District Index recently which was provisionally launched by the Hon'ble Chief Minister. In the provisional index, which is the district index for all the districts of Haryana, we took 15 goals and 95 indicators. Panchkula was lagging, and Ambala was number one, having the composite score of 73, so there is a lot of catching up that Panchkula still needs to do. It helps us understand the starting point. This starting point is important to understand alongside the final aim and aspirations. Unless, these two points are clear, as marketing principles state, one will not be able to cross the bridge between the two, or build new bridges between the two either.

## Panchkula SDG Index versus State



If we go a little deeper actually into the District Index, there are certain areas in which, as compared to the Haryana average, Panchkula still needs to catch up in a big way. Two of these are SDG 12 and 13. SDG 12 refers to responsible consumption and production where Panchkula's average lags behind Haryana by 23 points. SDG 13 refers to climate action. Both of these, especially SDG 13 have a major role to play for Panchkula since Morni hills and Shivalik foothills are a part of the district. So there is a huge amount of responsibility on us when we look at this data. That's a good advantage for us as not many districts will be able to talk about a proper city where there are rural areas available in addition to hilly areas making it a very good mix of terrain and climate action needs to be looked at similarly.

The poverty level of Panchkula is lower than the Haryana average, but that is because the Haryana per capita income is always skewed because of the good per capita income which is there in Gurgaon, it does

not represent the whole of Haryana.

Then comes the health indicators which indicate that Panchkula is scoring a little lower than the Haryana average score of 67, which is quite surprising. Lastly, there is the SDG 10, which is reduced inequalities, where Panchkula again scores lower than the Haryana average of 62, the score of Panchkula being 52. There's a 10-point difference in this which is startling. It is recommended that SDG be used as a framework for the two challenges.

Although Panchkula is improving faster than the 71 cities in the survey, a lot needs to be done. Our Singapore Innovation Centre specifically works on urban development from the lens of SDGs, and these are the thematic areas on which we must focus, which include four key city drivers when we are talking of future cities. At the time when we are defining what Panchkula as a city should be, we should not just look at 2030 as the deadline. Even the Government of India is now looking at 2047. Hence, when we are trying to create a vision, let's look till 2047 from 2030 and beyond. The four-city

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drivers, or we can call them the future city drivers, which we need to look at are digital infrastructure, data management and analysis, smart city governance, and financing and innovative partnership collaborations. Digital infrastructure is important for both accessibility of services and decision making. For the purposes of correct decision making, there is a need for effective data management and analysis. These two factors play a big role in smart city governance and building partnership collaborations. Together, these drivers will make it possible to have an inclusive, sustainable, and adaptable city.

Panchkula should continue providing a decent quality of life to all its citizens with modern urban amenities, ample livelihood opportunities, economic development, as well as a pollution free environment. Its policies should be derived by engaging its citizens, keeping in view inclusivity, sustainability, and collaboration with Government, Private, Research Institutions, and International Organisations.

The crux of the discussion now and in the future for PMDA is the positioning of Panchkula, to define it as a city. Such a definition will make clear areas of work to citizens, administrators and decision-makers. It is exactly also what we are trying to do in Chandigarh and UNDP.

# AN OVERVIEW OF THE WORKING OF THE PANCHKULA METROPOLITAN DEVELOPMENT AUTHORITY

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Almost all the cities have the same challenges, and most of them are growing at a breakneck speed. The development that has been seen in India in the past decade is way more than one can see in European cities in the past 50 years. The challenges in the modern world include climate change and carbon neutrality, the most recent being the pandemic, making us focus on resilient cities that can grow even when a pandemic is raging. The smartest step is indeed to establish something like the Panchkula Metropolitan Development Authority because it will consolidate everything in one place. It's important to have a structured organization to support the efficient planning and the management of the urban spaces. Collaboration of government organizations with the private sector, including public-private-partnership projects, as well as academic institutions for research and international organizations, and getting these stakeholders around the table and discuss what is the best way forward should be one of the main mandates of PMDA. It is of great importance to create expertise within the PMDA for Panchkula to become an example for a livable as well as a resilient city.

After being involved in many smart city projects over the years, I have noticed that one of the major challenges has been for the city administration to take up new technology. Taking up new technology, in this context means, knowing what all is out there, what is available, understanding

the city's and the citizens' needs, making it an inclusive exercise to ensure uptake of innovation and technology - something that has been missing to the greatest extent. This is an issue that was also seen in European cities. Panchkula Metropolitan area has the opportunity to not only "retrofit" something really old but also to create something new. Conducting regular hackathons, where citizens can come and develop ideas and innovations which are important to them will be immensely helpful for administrators to be in touch with the needs of the people. As an example, at such a hackathon, an app was developed that gives information to the people about the places in the city that are disabled-people friendly, which gave administrators further inspiration for the planning of the city. The concept of a living lab can also be adopted by a city like Panchkula, where technologies and solutions are tested by a living population, like faculty and students on a university campus. This produces the opportunity to test a number of things including security solutions, lighting solutions, water solutions, electricity solutions, and waste solutions. These living labs can be on the premises of universities and research centres, where the solutions are tested on a sample size of 6000-10000 people. It helps in understanding whether the new technology would be taken well by the population or not. These can be tuned to the specific

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issues that Panchkula is facing, which are followed by inviting companies that are solution providers in addition to entrepreneur innovators to test solutions on the campus. This will also help foreign companies who bring technologies from their countries but find it difficult to engage with collaborators as they have no way to showcase that their technologies would work in India as well. It is where the report of the living lab will come into use, and therefore PMDA could consider having something on these lines.

Metropolitan authorities have also sprung out in European countries and in some instances have started advising different countries and organisations all over the world on the adoption of technologies and the way forward. Hence, the formation of PMDA can be pivotal in making Panchkula one of the top cities in the country.

The last point pertains to financing because when you're developing a large metropolitan area, there will be a lot of projects, and one would want to implement as much as possible, and a lot of that will require finance. The national promotional banks, unilaterally, are of the opinion that at the moment there's no dearth of funding in the present scenario. The one capability that the PMDA must focus on is how to structure projects. The moment planning starts for a project that focuses on sustainability, clean air, inclusivity, and looks at creating resilient communities, national promotional banks can be attracted to fund these projects considering all the boxes are ticked when the banks look to fund any project.

The core message is to create a structured organization and then be able to understand what is out there, gather the awareness, understand how to evaluate

technologies (there are a lot of different systems and programs on how to evaluate technologies), include citizens in the planning, and then be able to structure projects to enable financing to flow to support the structure.

# SOCIAL AND ECONOMIC INITIATIVES FOR INCLUSIVE DEVELOPMENT

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Social Inclusion is the act of making all groups of people within a society feel valued and important. It is the provision of certain rights to all individuals and groups in society, such as employment, adequate housing, health care, education, and training. It is the process of improving the terms on which individuals and groups take part in society – improvement ability, opportunity, and dignity of the disadvantaged on the basis of their identity. In every country, certain groups are excluded through a number of practices ranging from stereotypes, stigmas, and superstitions based on gender, race, ethnicity, religion, gender identity, or disability status. Thus, inclusive growth or development needs to be promoted by all nations, especially by a developing nation like ours.

Inclusive growth or development has been conceived by the economists as a concept in which a welfare state makes an effort to minimize the gaps between the rich and the poor. In a welfare state, weaker sections of the society are provided incentives or opportunities for building up their economic capacities. Such opportunities may come under "affirmative action" such as protective discrimination, and reservation policies in economic, political and social fields. However, in sociological terms, inclusive development, which got currency during the eleventh Five Year Plan period in India, may be considered in terms of providing distributive justice in such a

goods and services generated within the country and the inflow of these through aid, trade, and investment from other nations reach all sections of the society in an equitable way, to provide the facilities and opportunities to all irrespective of the age, gender, income, education, health care and nutritional status of the people.

In a democratic setup, equality is the focus around which the socio-political life of the people revolves along with justice, fraternity, and liberty. Equality issues are the main challenge to be confronted by the country, that is, the increasing gap between the rich and poor needs to be reduced effectively in order to make inclusive development a possibility. This can be achieved through pro-poor policies and technological innovations with the support of participatory development initiatives. To maintain justice, we need to explore the ideas of social distributive justice for poorer sections of the society, especially the scheduled caste, scheduled tribes, OBCs, women, physically disabled, and mentally disabled persons. There is an essential need to provide welfare schemes for making their role for development more functional and to bring about inclusive development.

For the liberty of the people, there is a very strong need to acquire economic independence for all. This can be done by increasing the use of labour-intensive technology rather than capital-intensive technology to generate employment opportunities, especially among the

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deprived sections of society. Without attaining this, inclusive development may become an unreachable goal.

Inclusive Development should look into the nature of the inter-relationship between different sectors, that is socioeconomic, political, and environmental development. Planning is expected to be on integrative lines, and the majority of National Development Plans should consider economic, physical, infrastructural, educational, health, and welfare targets of growth and expansion. These are related to population policy on urbanization, industrial location, and environmental pollution, policies relating to regional development, income growth, income distribution, land reforms, policies governing administration, and people's participation in planning, as well as the implementation of plans.

An inclusive approach should also include questions of massive rural migration to urban areas, population check, health care, education, age, the composition of the population, spacing of childbirths, and sex ratios in cities which are of great relevance due to their social implications. For example, changes in the age structure of the population have a bearing on education, labour force availability, and the proportion of dependents to be supported by society.

For health care, a city like Panchkula should, apart from clinical care, organize an effective, preventive health service, which is related to potable water and sanitation, besides providing child and maternal health care (including a balanced diet to the school going population and to the mothers of young children). As far as education is concerned, there is a need to broaden the base of the educational pyramid at the primary and high school levels. It should be made more work-

oriented by introducing technical and vocational courses at the middle and secondary stages of school education. State subsidies should be provided to the students who get admission for higher education in universities, especially to those deserving students who belong to poorer families. There is a need for quality education which requires trained manpower who ensure that our young vulnerable age group population remains attached to the educational system and does not drop out of school at the primary level. We need to open more libraries in a city like Panchkula, especially to encourage reading habits among the youth. We also need to include the "Make in India" concept, not only in the field of engineering, medicine, and law but also for nursing, paramedical staff, health workers, etc., engaged in population check.

In order to bring inclusive development in the health care system, the state can train some of the Registered Medical Practitioners (RMPs) in the allopathic system of medicine along with folk medicine practices such as Ayurveda and Unani to remove the shortage of doctors, especially in rural areas. This can be done by providing them condensed courses of six months to one year, while attaching them to hospitals established in towns and cities. Under medical care, there is also a dire need to establish an early intervention center for the civil hospital located at the district headquarter for people with disability. Additionally, such people should be provided with disability certificates at the sub-district level itself, rather than them having to run from pillar to post in cities. Further, infrastructure for research and development centers for intellectually disabled/autism is not being looked into. There is a need to establish executive boards comprising 40 to 70 percent of parents who should be part of these

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challenges, another important challenge to make inclusive development a possibility is the issue of gender discrimination. No doubt, our government has provided a number of schemes such as "Beti Bachao, Beti Padhao", "Sukanya Samriddhi Yojana", "Ladli Lakshmi Yojana", "Shagun Scheme", etc., but such schemes are availed mainly by the educated and well-aware women, whereas a large majority of the illiterates, poor tribal women, and those in the rural areas and urban slums do not get these benefit. This inequality has to be converted into equality by directing such schemes and making other schemes suitable to the needs of the women of weaker sections of society. The state machinery has to create opportunities and get these ideas converted into meaningful inputs for the inclusive development of women.

Thus, there is a need to follow certain steps to fulfill the goal of achieving inclusive development in an upcoming city like Panchkula. These are as follows:

- 1.** Involve excluded people in the planning and delivery of development programmes by establishing adequately resourced concentrated groups, including young mothers, activists in sports groups for careers, etc.
- 2.** Promote sustainability at the local level by internalizing the supply and demand for local goods and services within the town or city.
- 3.** Promote human resource development, capacity building, and the caring community at the local level, such as opening old age homes, orphanages, slum area betterment, etc.

- 4.** Aim to increase the amount and range of community-owned assets that give local communities an income through community businesses, resource centre development trusts, etc.

- 5.** Community development to improve a lot of socially excluded people by providing services such as post offices, libraries (including library cafes), community halls, public transport, etc.

- 6.** Provide information and advice to all on job or training opportunities, debt management, child care, and so on.

- 7.** Establish a citizens' advice bureau for different delivery mechanisms.

To conclude, the state authorities should take note of these with commitment and political will to reach the goal of inclusive development of our society. All stakeholders like individuals, groups, families, state and non-state actors, and our bureaucratic administration need to pursue efforts to establish a good society, based on integrity and humane behavior in order to move towards inclusive development.

# MAKING CITIES INCLUSIVE NEEDS A MULTIFARIOUS APPROACH

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An inclusive city has been defined by UN-Habitat as one that promotes growth with equity. Participatory planning and decision-making are at the heart of the inclusive city. While conceptual and theoretical frameworks might not provide instant solutions to challenges under consideration, their articulation of contemporary issues provides deeper insight and understanding, which contributes towards achieving sustainable solutions. The discourse on inclusion and exclusion in contemporary cities goes beyond the mere physical manifestation of the various dimensions of inclusivity. It includes the balancing of three interlinked and interdependent components of inclusion: spatial, social, and economic. Any deliberation in making Panchkula an inclusive city must include:

## **Spatial inclusion:**

Emerging spatial patterns with the merging of city-regions beyond administrative boundaries adds to the urban management issues of fragmented institutional structures and delivery mechanisms. Assessing urban governance and management to streamline institutional arrangements becomes a key platform for inclusive delivery of urban services to ensure a good quality of life for all citizens. Persistent patterns of spatial inequality, with wide differences in standards of living and socioeconomic mobility in the city, can hamper the benefits of economic development, exacerbate social exclusion, and ripen the conditions for social instability. The set of most often cited problems identified includes inadequate housing and basic services. Therefore, two immediate interventions are required, i.e., provision of affordable land, housing and infrastructure and basic services.

## **Provision of Affordable land and Housing:**

A geographic variation in economic development within the city can be witnessed with uneven development of some areas/sectors within the city (especially sectors beyond sector 21). While inclusive urban redevelopment requires the revitalization of inner-city areas, it should not be at the cost of ignoring the outer-city areas which become slums. As a growing number of people are migrating to informal settlements in and around the city (Rajiv Colony, etc.; habitations around Ghaggar), affordable housing and slum rehabilitation are required for urban renewal. The Panchkula city urgently requires an affordable housing scheme and/or slum rehabilitation policy (as in Chandigarh) to cater to the disadvantaged sections.

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## **Infrastructure and Basic Services:**

Developing infrastructure is the key to improving the quality of life of urban residents. Spatial inclusion requires providing affordable housing and civic amenities to residents. Upgrading the basic infrastructure and providing universal access to urban services is not only essential for creating inclusive cities but also instrumental for generating competitive and sustainable cities. Investments in urban renewal and slum upgradation can stimulate growth in the urban economy. The Panchkula city was originally developed as a satellite town of Chandigarh. The density of population in the city has increased manifold in the last few years. To cater to the increasing demand for housing, changes in housing bye-laws have been made recently. Though these changes in bye-laws will ease out housing shortage in the short term, they will have a long-term adverse impact on the city. On one hand, it will lead to haphazard growth of the city, on the other hand, it will compromise on the aesthetics of the city.

As civil amenities in the city have not been upgraded at the same pace, additional pressure on the same will multiply problems in the years to come. The solution could have been the introduction of group housing societies at specific locations rather than allowing multiple floors in each sector. Other critical areas for investment to address spatial inclusion are through targeted investments in the key sectors: water and sanitation, solid waste management, energy, transport, and land management. A multisector approach must be adopted by combining water management (provision of drinking water, sanitation, drainage); solid waste management; and urban city transport. The city needs to establish better education (University, professional colleges) and health infrastructure for its residents so that their dependence on Chandigarh for these

basic amenities could be curtailed. It is also important to ensure the development of neighbouring old towns such as Kalka, Raipur Rani, Pinjore, and Morni. The development of these areas will lead to less migration from here to Panchkula city and will lessen the pressure on the city.

## **Social inclusion:**

Cities are the ideal stage for developing policies and practices of inclusion compared to the global and the national. Social inclusion is about creating fair and equitable cities. Cities provide huge opportunities for people to assimilate by living in the same area, undertaking new activities, and creating new identities. Cities are not only growing in population but also becoming increasingly diverse and ethnically heterogeneous. This twofold process poses great challenges, as cities have to manage the multi-faceted integration of their arriving newcomers into society and urban life, as well as ensure continued social cohesion. Cities must provide greater freedom and opportunity for social mobility for immigrants, minorities, and women. There is a need to ensure community participation in development and decision-making. It should seek to include every voice in the city's decision-making through a dynamic participatory process. Policy dialogue must be initiated to involve people from different interest groups sitting together to focus on an issue in which they have a mutual interest. For instance, the Draft Master plan of the city must be discussed with the people. Social and print media (Facebook page, WhatsApp, etc.) should be used. The draft master plan must be published, and objections/suggestions from the people must be taken. It can bridge understanding and bring about meaningful improvements to policies or programmes. Effective use of public spaces can be an important strategy

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for inclusiveness. Urban exclusion is most acutely felt during leisure time: while the affluent citizens have access to green spaces in their homes and clubs and entertainment in restaurants, cinemas, and malls, the common man only has public spaces as their leisure options. Improved access to green spaces, waterfronts, and public parks can go a long way in creating social inclusion in the city.

Besides this, an Inclusive city needs to guarantee equal rights, participation, and opportunities for all. The universal design needs to be adopted to ensure universal accessibility of infrastructure. Universal design aims to provide access for as many people as possible. This approach allows PWD to be more independent and to have access to more opportunities. In the physical context, it is necessary to retrofit the city to create a barrier-free environment for people with mobility or visual impairments. There is a need for increased awareness and sensitivity toward the needs of differently-abled people. The first step is to start with an enumeration of the differently-abled population to understand the magnitude of the issue. Social assistance and welfare service programs are required for the most vulnerable with no means of support, including single mothers and the homeless.

Cities learn from each other as policies are tested in cities with the more successful ones diffused, adopted, and adapted around the global network. Some best practices from other cities can be incorporated to ensure social inclusion. For instance, as urban areas expand and new developments are built by immigrants who move to cities, basic education itself becomes a challenge for their children. In Pune, to accommodate these transient lives, 'Door Step School' sends a small bus

classroom to pick up students, providing a stable setting in which students learn basic literacy and arithmetic skills. Similarly, in Chandigarh, a bus service called 'Kalam Express' was started to cater to the educational needs of street children. Panchkula can replicate some of these practices to ensure social inclusion.

### **Economic inclusion:**

Inclusive growth is essential to provide all people with a chance to benefit from economic growth. It includes bringing the poor, the underemployed, and the non-salaried people into urban investment projects and programs to improve their lives. To develop inclusive cities, there is an urgent need to invest in a strategic and targeted manner to address the poverty dimensions of income, education, environment, and health. It means promoting greater access to opportunities by expanding human capacities, especially for the disadvantaged, through investments in education, health, and basic social protection. To address the education and health dimensions of poverty, investments in basic and vocational education, as well as primary health, are crucial as they bolster the income generation opportunities for the urban poor. The industrial infrastructure in the city needs to be developed. There is no major industrial unit in the city (HMT closed down). The existing small manufacturing units are not capable of ensuring employment at a larger scale. Furthermore, an IT hub (as in Chandigarh and Mohali) can be developed in the city to provide growth opportunities to the residents. Recreational activities (Malls, Multiplex) must also be upgraded to provide better job opportunities to people. Training and skill development in both production and marketing would go a long way in preserving traditional arts, crafts, and local industries as well as provide the

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local artisan with the necessary wherewithal for a decent living.

## **Conclusion:**

The United Nations' Sustainable Development Goal 11 aims to “make cities and human settlements inclusive, safe, resilient, and sustainable” by 2030. Making our cities more inclusive is central to this universal call. Though there are multiple hurdles to overcome, this goal can be a reality by forging unique partnerships with the private sector, academia, and local community organizations. Urban development strategy should be seen as a process in a contested space wherein various interests and goals emerge as actors to mobilise resources and decision-making practice. As we seek to address the challenges outlined in the Sustainable Development Goals and the New Urban Agenda, collaborations between organizations of urban informal workers, as well as city and national governments, are the essential building blocks for building more inclusive cities.

# PRIORITIZING THE LOCAL(S) IN METROPOLITAN DEVELOPMENT BY REORIENTING AND EXPANDING PARTICIPATION IN THE PROCESS OF PLANNING

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A metropolitan area involves a core city with a number of smaller towns, cities, and villages which have become contiguous and co-dependent. The aim to declare a metropolitan area can be debated as a mechanism for better utilization of resources, infrastructure development and connectivity. It can also be seen as a strategy to encourage investments, promoting economic development for ensuring better livelihood and living opportunities for people, as well as revenue generation for the state. Such an exercise entails coordinating between pre-existing urban and rural local bodies, state and national actors for arriving at what is required and beneficial for the larger area. However, for a cohesive and successful metropolitan area, planning the foundation of arriving at this regional vision needs to commence from the local by taking the process of dialogue right to the ground. It is essential for a sound understanding of what are the local issues and concerns and prioritizing them while sharing resources, building infrastructures, and bringing new projects into the area. I will therefore concentrate on discussing contours of participation in urban planning, especially in context to the populations on the urban margins. The Panchkula

Metropolitan Development Authority (PMDA) Act, 2021, states, "The state government may, by notification, declare any area falling within the limits of controlled areas in Panchkula District to be notified area having the potential for urban expansion and the area under any or all of the following local authorities, namely - Municipal Corporation, Panchkula; Any panchayat in Panchkula district in so far as the abadi deh of such Panchayat is concerned". It can therefore be deduced that the cities, towns, and villages with varying histories, sizes, topography, and socio-economic contexts, existing in the Panchkula District would become a part of the Panchkula Metropolitan Area (PMA) in the future. Especially since most of the areas within the Panchkula district already exhibit a form of fairly contiguous and interdependent character. Therefore, participation and inclusion need to be understood at two scales which are important independently, as well as in context to each other. One entails the scale of discussions around the inclusion of existing cities, towns, villages, and peri-urban areas in the Panchkula District - what advantages and disadvantages for the present and the future do they see from metropolitan planning of Panchkula city for themselves?

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The second scale of discussions on inclusion and participation which I will be focusing more on is at the level of Panchkula city itself. I propose a rethinking of the ways in which participation in urban processes—planning and governance has been approached in the past and stress the need to make it more democratic and decentralized. The dual reality of wealth and poverty existing in the cities is a given. However, how these polarisations get created and perpetuated is something which requires a reorientation in the way planning and governance structures understand poverty and its inter-relation with space, i.e., land. I argue that the creation and perpetuation of this duality, among others, is a function of the systemic ways in which policies, planning, and governance have been envisaged and implemented. While the ground realities of cities and city-regions are extremely complex, the policies and plans often remain static and linear, allowing little room to accommodate this complexity. The result is varying degrees of exclusions. From the analysis drawn from work in other cities, the exclusions as a result of assembling village land for creation or expansion of cities include lack of basic amenities provisioning within village residential areas, the conflict between village livelihoods and urban regulations, and gradual degeneration of the quality of community life, among many others. Further, the migrant labouring workforce of the city find themselves excluded from the right to city spaces and resources, and experience everyday violence. The exclusions manifest through contestations over the lack of possibilities for spaces in relation to shelter and livelihoods; access to basic services and social amenities; spaces for leisure and play. Thus, the spatial manifestation of urban poverty gets reflected as the antithesis of the imagined planned city. These sites which come to be known as slums, informal settlements, illegal

encroached areas, and unplanned growths, can be called nonplanned areas<sup>1</sup> due to the inability of planning exercises to bring the complexity of the socio-economic-cultural dynamism and heterogeneity of the city into the fold of land use planning. Who and what are excluded, thus, become extremely critical questions to be asked to identify, understand and analyse before commencing upon any planning exercise. It helps explore answers to what can be done to mitigate these exclusions and propose inclusions which are expansive.

To understand this complexity and heterogeneity of the lived city, it is therefore critical to revisit how the process of urban planning is envisaged and executed by the government right from the phase of the visioning. Urban planning, an important instrument of the state for land organization, distribution, and management, renders no space for engagement with citizens. It is commonly believed and practiced that planning is a technical and specialized process that is difficult for most people to understand and make sense of. However, it is this very exercise that has implications on the lives of the people, their interfaces with the city and its region. Therefore, it is essential to acknowledge and incorporate the existence of different pieces of knowledge that people possess based on their daily encounters and lived experiences, which in turn can be utilized for planning a city that is reflective, appreciative, and 'inclusive' of this diversity. The challenging task ahead for PMDA is to ensure that possibilities for participation, conversations, negotiations, and conflict resolution are created in the planning process at differing scales. It is integral to revisit participation merely as a tokenistic

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<sup>1</sup>As Madhu Sarin (1982) argues in her work on Chandigarh.

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roundtable discussion with invited dignitaries. Rather participation in planning should constitute open public discussions at the level of wards, gram sabhas involving local elected representatives, community leaders, residents, civil society organizations, etc. This would translate to reorienting the outreach efforts to make people aware of what the State is proposing and preparedness of government institutions that there will be questions, concerns, contestations, and negotiations in such events. These public discussions require to be structured in easy-to-understand and multi-lingual formats, thus, ensuring wider outreach, interest, and engagement from larger sections of the city. The “publicness” of these discussions is to be stressed, as for those living on the urban margins accessing the administrative and bureaucratic spaces of the city is neither easy nor welcome. Also, the issues raised by the public, especially by those who remain on the urban margins, might be more towards lack of infrastructures, access to social amenities, and basic services. However, they reflect the gaps in the planning and governance process that would become vital to address before commencing new projects of urban expansion.

Taking participation in planning to the local level and involving local bodies through a process-oriented approach is aimed towards ensuring democratic decentralization of planning, and the convergence of planning and governance. This helps better identification of the concerns of people and the mechanisms to tackle them, ensuring that the city is more liveable, inclusive and sustainable. It would require enhancing the capacities of the local bodies as well as structuring these processes over a sufficient timeframe. It would also be a step towards bringing more transparency and accountability to processes of city planning and projects undertaken in relation to it.

Further, this process would also facilitate the identification of agendas for short-term and long-term planning and ensure that they speak to each other rather than emerge as fragmented initiatives. Complementing this process of participation in planning should be the mapping of socio-economic linkages of informal habitats. Such informal habitats would comprise of shelter, livelihood, access to amenities in relation to the rest of the city and region. It helps understand (i) contributions of the urban poor residents towards the functioning of the city, (ii) the close inter-relations and inter-dependence between the planned-nonplanned / formal-informal. This in turn leads to the development of proposals that facilitate a holistic development approach over fragmented scheme implementations. The aim needs to be the enhancement of the quality of life and opportunities for the populations on the urban margins, guided by an in-depth understanding of the relationship between urban poverty and land.

In the end, cities will always be sites of contestation over land, resources, and infrastructures. However, how and where these contestations are able to voice out their concerns and mechanisms which are adopted to resolve them will define parameters of inclusivity and equity in the city. In the vision for Panchkula, it thus becomes critical that sufficient spaces with adequate timeframes are provided to all residents of the city. More so for the urban poor, so that the new authority is able to formulate informed proposals which strike a balance between competitive-speculative urbanization interests and developments prioritizing public interest for those on the margins of the city.

# THE 15-MINUTE PANCHKULA: SPACE AND SCOPE FOR NMT AND PEDESTRIANIZATION IN THE CITY AND FINDING THE PERFECT BLEND BETWEEN FASTER AND CLEANER MOBILITY

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## CONNECTED AND SAFE MOBILITY

The year 2020 and 2021 observed compressed and restricted mobility. The year 2022 will be the transition year of released mobility and will set the foundation for complete mobility in 2023. India registered phenomenal growth of expressway connectivity across the length and width of the country despite the odd situation because of Covid-19. By 2025, another 10647 km length of the expressway will be constructed, and approximately 10537 km length will be under planning. It will provide fast connectivity between settlements and set the challenge for the upgradation of the secondary network. Similar to the vision and benchmarking of Central Government, different State governments and local bodies should use the year 2022 for master planning of their local network so as to provide connectivity even to the least accessible area. In recent years people have demanded connectivity, and the demand for better and safe roads will come in the coming years. The network of National Highway and State Highways comprises approximately 5% of the network, but it accounts for two-thirds of accidents. Close to 51 accidents and 17 deaths every hour draw the attention of all towards making roads safer. The

Sustainable Development Goal (SDG) 3.6 talks of reducing deaths and injuries. We need to have our vision and action plan for this goal. Our roads need to identify the requirements of vulnerable users. Vulnerable users (VRUs) that comprise pedestrians, Bicyclist, and Two-wheelers, constitute 66% of fatalities that need special attention. Our roads should be "SAFE FOR ALL AT ALL TIMES".

2020 and 2021 taught us the need for accessibility and affordability. It drew our attention towards another important aspect, "ACCESSIBILITY TO HEALTH INFRASTRUCTURE". India needs to have a road map for providing transport accessibility to health infrastructure of all hierarchy at all levels be it urban or rural.

## EV MOMENTUM

Climate change is another word that has been on the upfront news everywhere. Being a signatory to the Paris declaration and subsequent summit, we have to see that our policy and action are centered towards reducing carbon footprint. While the Automobile sector is moving towards introducing non-gasoline mode, 2022 will also be the year of transition to Electric Vehicle (EV). Despite the fact that the

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government has introduced a subsidy for the benefit of users, more than 80% of users are those who already own vehicles. It is also because of the cost of EVs. 2022 will see how these EVs are within the affordable reach of the people. While efforts are providing infrastructure at highways, urban areas are still the questioned ones. It needs to be made mandatory to provide benchmarking infrastructure in local areas through mobility plans and setting a minimum share of these modes.

### **ZERO EMISSION ZONE AND CLEAN NEIGHBORHOOD**

While the government has provided thrust to EV Programme, more needs to be done for tapping other non-conventional sources of energy. Leaving commercial viability aside, we need to tap pure energy for usage in the habitat sector, particularly for mobility needs. It will be good to see if we use solar energy and hydrogen fuel energy for clean mobility. Even the highest court of our country mentioned this. Quality of Life depends upon the environment that people experience for day-to-day mobility function. It is important that we identify "NO EMISSION ZONE" or "LOW TOLERANCE ZONE". Local bodies, through people participation, should prepare plans and action for these types of zones wherein the mobility needs are only by walk or cycle or by clean energy modes. It can easily be done by starting the concept of "Clean Neighborhood". Our neighborhood should forgive slow speeds. Neighborhood should have "STREET" and not "ROAD". Street provides accessibility to all whereas road provides mobility but to vehicle. 2022-2023 will certainly see momentum for making this happen. Local representatives must be taken into confidence while preparing the plan of action for "SAFE, CLEAN, ACCESSIBLE NEIGHBORHOOD".

### **SABKI AUR SURAKSHIT SADAK (SAFE ROAD FOR ALL)**

An active street is a sign of security and prosperity. Hence, it is important to have a "SABKI AUR SURAKSHIT SADAK". As per a study done by SPA Delhi (2019), a street having no users, no activity becomes a "SUNI SADAK" and later converts to a "KHUNI SADAK". It is validated by crime records that such roads become a hot spot of crimes. It will be good to see that year 2022 reduces crimes that otherwise happen because of the inaction of Transport negligence. Our roads and street should be safer for women at all times. If it is translated into a plan and action, then it will lead to safe walkability. Streets should also be children friendly, and thus we should plan and design to meet the safe and clean assisted and independent mobility of the children of different age groups.

### **INTEGRATED MOBILITY**

In recent years it has been noticed that the non-integration of modes leads to inequitable supply of transport system which results in poor acceptance by people. 2022 and further will see that integrated mobility will be the focus of our plan. The Centre has already identified the need for a "Multi-Modal Transport Hub" so as to provide integration of different modes and systems. In the city, it is important to look at this as integrated mobility will improve the level of service of the facility in reduced interchange time and reduced cost but with an acceptable level of comfort.

### **CONGESTION PRICING**

The years 2020 and 2021, by the excuse of deadly Covid-19, provided relief from traffic congestion as mobility could not achieve its peak. 2022's second half may take us to spring compressed mobility to release and thereby create traffic

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congestion. While we need a better public transport system, we also need to compress the personalized modes. Where public and intermediate public transport supply options are better, and we have good facilities for vulnerable users, we may discourage personalized modes either by no parking or by imposing congestion charges.

### **PERI URBAN AREA AT NEGLECT TO BE BROUGHT TO STREAMLINE**

Peri-urban areas generally lack in all services but transport most, as they do not have good network connectivity and public transport connectivity. They also have poor first and last-mile connectivity. It is important to bring them into the streamline as they are mostly those who come to these areas due to the low cost of habitat need.

### **URBAN FREIGHT DISTRIBUTION AND E COMMERCE**

Covid-19 taught us the value of e-commerce and innovative methods of urban freight distribution. We, for the first time, understood the potential of the hyper-local delivery system. While the system reduces the vehicle km, vehicle hours, and above all, energy and pollution, it provides the service at footstep and at least cost. We need to recognize this as service and plan infrastructure accordingly.

# FOCUS ON PEDESTRIANISATION AND NON-MOTORISED PLANNING IN PANCHKULA

Vincent Van Noord

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It's a great opportunity, especially for Panchkula, that the city will redevelop itself and have its own new metropolitan development authority. The body can take a lot of inspiration and learnings from the other metropolitan development authorities which are there in the state of Haryana, in Gurgaon and Faridabad, for example.

It's important that you set the standards high that you want to achieve, even to the extent to become the most livable city in the state of Haryana, maybe the most livable city in north India, or even in India. It's well planned compared to other cities in India. Panchkula has a very nice green area next to it (a National Park), the city is quite spacious if you compare it to two other cities in the country and even other parts of the world.

Moving forward, it will be very important that the different departments and divisions within the PMDA work together, communicate and co-create, which is one of the challenges that we have often seen at the Central, State, and village level as well. There could perhaps be a kind of a joint working group where a representative from each division can speak on behalf of their area of expertise and focus, ensure everyone is aware of what is planned, not to work in a silo, and consider combined efforts. Walkways, BRTS, and cycle paths

cannot be done in isolation but in sync with other divisions of the ULB, such as the public works department, transport as well as budgeting, etc. Another benefit of combining the various departments within the Panchkula administration would be economies of scale and cost-saving with proper planning, ensuring coherence while considering joint efforts where there is a clear overlap. It is where an authority like PMDA can play a pivotal role.

In addition to this, sustainability should also be given importance, among others, where environmental impact assessments are concerned, which are often overlooked or waived off during the process of urban development. Comparable examples and learnings are taken from other parts of the country, and even Europe could be considered when looking at the requirements of Panchkula. Whereas, when Europe is concerned, we have seen that copy/paste often does not work in Indian conditions. For example, the Commonwealth Games Delhi took inspiration from Bogota, Colombia where the BRT was implemented in the city. Unfortunately, this did not work as the space to execute this was limited, and instead of easing traffic, it caused more jams in the end. However, if such examples are considered, we should take inspiration and see how these can be adapted to the local conditions. Ideally, first on a smaller scale, a

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'pilot', to see what the teething problems are, and then scale up once proven successful. Financial risks can then be mitigated. We should also focus on sustainable solutions by looking at alternative fuels and electrically powered solutions where mobility and transport are concerned. New technologies such as the pod rapid transit (PRT), which is currently functioning at Heathrow airport, could be studied. Here we have a personalized pod that can bring you from A to Z and is much cheaper than a metro; it can run on electricity, and there is research going on for it to run it on (green) hydrogen in the near future.

Trams and ropeways can also be other ways to ease traffic and be a mobility solution, with Austrian companies already playing a part in India. An example to make people prefer pedestrianisation and avoid vehicular traffic which can be taken from Europe is to make the city centre less attractive for cars, where the on-street parking space would decrease, and the costs for parking in these areas would increase. Pedestrian areas where no motorized vehicles are allowed is something that we proposed in the city of Panjim, Goa. Having a non-motorized, pedestrian area changes the whole vibe of the city, and it makes it much safer and allows for shops, cafes, restaurants to flourish as it will attract more people.

If the ambition is to 'pedestrianise' the city then safety is an extremely important matter. The pavements need to be wide enough for people to walk, even with no potholes, and accessible for the disabled, the elderly, and children. Plus, sufficient and efficient road crossings should be created.

Another solution that is quite popular in Europe and which supports the decongestion of urban areas is to have

more parking garages on the outskirts of the city when you enter the area. Solutions for the last mile connectivity can be considered, such as e-rickshaws or e-bikes to get to your final destination, especially for people coming from outside the city. The local residents might not be too happy with this, and for them, special benefits can be made: resident parking permission, discount parking, designated parking areas for residents, etc.

The earlier mentioned 'decongestion' solutions also provide revenue models for the city from which inspiration can be taken from other parts of the world. For example, in the city of Amsterdam, they have ear approx. 300 million euros per year (Rs 2,400 Cr). It is extremely high and not possible to copy/paste, but with proper research and planning, I am sure that healthy financial models can be created for a ULB such as Panchkula. For a city to be livable and safe, proper lighting is also a very important element for the people walking at night. There can be shaded areas where people can walk when it's hot or when it's raining during monsoon, and it's a fantastic opportunity to have cycling tracks.

If we look at the (re)development of the city from a holistic perspective, where we focus on mobility/personalised transport/safety and security/pedestrians and in order to develop relevant solutions such as proper pavements, cycling tracks, BRTs, transport solutions and so on, in-depth spatial planning and utilisation models are crucial. Also, areas such as water management and drainage need to be considered in the scheme of things to prevent waterlogging, for example, which can create an unsafe environment. Extensive analysis needs to be done during the DPR stage when developing such initiatives, where we also consider learnings/best practices from other parts of the country and the world

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With an overarching Vision/Mission, every department should work on a daily basis towards the common goal; therefore, the formation of the Panchkula Metropolitan Development Authority is a perfect step in the right direction. Inspiration can be taken from the European countries as well from a governance perspective, and it is a given that there might be hiccups in the process, which could serve as a learning experience in delivering a great final product. At the end of the day, you need to work with local contractors and local planners, and developers and see how you can adapt it to the local circumstances. That's how we could look at sustainable new innovative technology solutions from Europe that have worked there but were adapted to local conditions.

# CREATING AN ACTIVE AND ACCESSIBLE CITY

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The pandemic has forced city planners and transport planners to contend with planning concepts that promote healthier, sustainable, and accessible cities. One such concept is that of the 15-minute city - a decentralized and polycentric city comprising multiple neighbourhoods. Each neighbourhood will be mixed-used and self-sufficient, where residents can easily walk or cycle to work and where public and social amenities are located within 15-minute walking distance. Carlos Moreno's award-winning concept of 2016 resonates strongly with the early 20th-century concept of "neighbourhood unit" put forward by Clarence Perry, who wanted to create vibrant localities where children would be able to walk to school in safety. The increasing predominance of automobiles in cities and the attendant issues of traffic and fatal road accidents led Perry to design a neighbourhood unit where ten percent of the area would be kept as open spaces. The school would be located at the centre of the residential neighbourhood, and commercial activities would be on the peripheral edges. The design idea was predicated upon the strict separation of vehicular and pedestrian traffic. For both Moreno and Perry, the emphasis is upon creating accessible and livable habitats and reducing the dependence on private motor vehicles. In fact, with climate change and worsening air quality, more and more city governments

are recognizing the need to reorient their land use and transportation arrangements in ways that put people first instead of cars. They are investing in measures that enable citizens to travel differently. The focus is on getting around the city to fulfill daily tasks in a safe, easy, environmentally sound, and enjoyable manner.

The National Urban Transport Policy published by the Government of India in 2006 (and subsequently revised in 2014) recognizes the need for bringing about a more equitable allocation of road space with people as the focus rather than cars in order to create livable cities. The aim is to reduce the need for personal vehicular trips and shift to non-motorized trips, and public transport options that cut down carbon emissions, pollution, congestion and is affordable for the urban poor. The issue of road safety is one of the major concerns that were highlighted in the revised version of the policy, given the ever-increasing per capita ownership of two and four-wheelers in Indian cities, the unruly road traffic, and lack of attention to the safety, health, and well-being of road users other than those using their private vehicles.

There are distinct social benefits that flow from putting pedestrians and cyclists at the centre of urban transportation planning and policy. Walking and cycling are inexpensive

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for users and reduce costs such as congestion, parking subsidies, energy consumption, and pollution emissions. Reducing emissions improves the quality of life for all citizens. Particularly for vulnerable social groups in the urban area - elderly, women, urban poor, children - those who form the bulk of pedestrians in a city and bear the brunt of unsafe and congested roads, pedestrianisation and improvement of infrastructures for cycling brings about positive changes in their overall experience of moving around in the city. Improving non-motorized transport improves access by other modes. For public transport to be efficient and accessible, it has to be supported by a quality walking environment. Short trips within neighbourhoods, which are made by motorized vehicles, will be reduced if walkability improves. Communities designed for walking and cycling are compact (so many destinations are within convenient distance of each other), connected (with streets that allow direct access), designed at a human scale, have attractive sidewalks and paths. It improves accessibility, affordability, safety, community livability and enhances social interaction.

However, the current dominant paradigm of transportation planning in our cities continues to give preference to the car user through road widening, the addition of flyovers, traffic management, removal of slow-moving traffic, and other "obstacles" to the speedy vehicular traffic. In providing for higher speeds for motor vehicles, access for other modes becomes severely compromised, because high-speed travel requires infrastructure that consumes vast amounts of space, and can be ensured only by limiting access, especially the vast majority of the Indian public of those who are poor and disadvantaged. Himanshu Burte, an academic argues that "Private

vehicles also take up more road space than their share of trips warrant, effectively privatising public space". While more roads and flyovers are built to accommodate more cars and two-wheelers, they effectively eat up the spaces for footpaths or cut up access for those who move around the city on foot or in cycles. While motor vehicles are important for goods to be transported, and for people to get around, especially covering longer distances or places marked by a lack of public transport connectivity, it is not correct to assume that their growing dominance is inevitable and reflects the emerging needs of all the city's inhabitants, especially the poor. Dominant planning models tend to discriminate against public transportation as well as against walking and cycling as being increasingly unviable options because they are seen to slow down motorised traffic. Yet, even today, in most cities, 40 to 50 percent of the modal share of trips are by foot while only 10 percent is by private vehicle. Unfortunately, modernist car-centric planning often sacrifices footpaths to road widening projects. However, for a few progressive city leaders around the world, such as Mayor Penalosa of Bogota, Columbia, it is the high quality of public spaces, particularly of pavements (and not roads or flyovers), that reflect the truly democratic and inclusive spirit of cities. Indeed, in the Indian context, streets are complex social spaces - they are spaces of livelihood for informal vendors, they are spaces of social gatherings, sports, and political functions given the lack of open spaces in our densely packed cities, they are places for the houseless to seek shelter, for parking of vehicles and for setting up of public amenities. Some scholars and policymakers are therefore calling for an integrated approach to transport planning wherein multiple modes and road user groups feature, and where the peculiarities of Indian street conditions and varied uses are taken into consideration.

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Ultimately, urban transport planning is about moral and political choices predicated upon what kind of a city we want for ourselves and our future generations? How do we want to move around in our city? Do we place our priority on smooth flowing traffic or the equitable allocation of road space to all types of modes? According to Madhav Badami, a transportation researcher, making "pedestrian accessibility as the very foundation of urban transport policy, along with quality public transit, pricing of motor vehicle use, and land use-transport integration, would minimise the need for, and curb rapid growth in, motor vehicle activity, allow all modes (including personal motor vehicles) to operate more efficiently, enhance the effectiveness of mass transit, and help achieve an urban transport system that is cost-effective, health-promoting, resource-conserving, environmentally benign, and socially equitable." What kind of urban area do the citizens want Panchkula to be - a residential hub, a satellite to Chandigarh, a self-sufficient city, a magnet for new industries, a regional hub of commerce and industrial activity? How will the citizens move around in the city? For what purposes will they need to move around, and how far will they need to go? What will be the combination of transportation modes available and accessible to them? How will land use be integrated with the urban transportation arrangements?

One can draw some valuable lessons on urban transportation planning from Panchkula's illustrious neighbour - Chandigarh. When Le Corbusier designed the master plan for Chandigarh, he explicitly used a seven-tier hierarchy of roads to carve out the city's road network known as Les Sept Voies de Circulation, or Seven Vs. The lowest level in the hierarchy was designated exclusively for walking

tracks and cycle paths. Though his larger city-level plan was dictated by the need to ensure the unrestricted movement of automobiles, Corbusier planned these pedestrianised streets to run through the middle of the residential sectors in the green areas, offering pedestrians both comfort and safety while also ensuring vehicular traffic moved smoothly. Unfortunately, the pedestrian pathways for linking different sectors through open green spaces from north to south have largely remained on paper. With growing incomes and affluence, Chandigarh today has the highest per capita ownership of cars in the country, and this has led to rising levels of congestion, road accidents, illegal parking, road rage, and pollution, despite the well-planned grid of urban roads - the very problems Le Corbusier sought to address by laying out a hierarchy of roads and separating pedestrian from vehicular traffic. Therefore, a well-planned, hierarchically laid out road network may not have the desired impact of enabling access for all or even ensuring a smooth flow of traffic.

Examples of persevering to achieve complete streets and enhancing accessibility and mobility for all citizens irrespective of class, gender, age, and physical ability, are to be found in experiments being conducted in cities such as Chennai and Pune. While Chennai is the first city in India to adopt the Non-Motorised Transport (NMT) Policy, setting apart a significant amount of its transport budget for the creation of complete streets, Pune leads the way in terms of an active citizenry and civil society participation and influence in the implementation of the urban street design guidelines and a city-wide cycling track plan. In addition, Pune has taken the unpopular route of travel demand management by implementing a parking management policy and by

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apportioning right of way to exclusive bus lanes and cycling lanes. Visionary and strong leadership at the city government level, along with active citizens, pressure groups, and innovative consulting teams, have enabled these transformations to take place.

Therefore, improving pedestrian and cycling facilities leads to better utilization of public transport, addresses the needs of vulnerable commuters, improves road safety, reduces emissions, and produces livable and healthy communities. But how do we get there? Following Chennai, cities can do a participatory budgetary allocation for pedestrian audits, access audits, and road safety audits. These should be made a regular feature of urban governance. These audits will be conducted by the Residents Associations, Shop Keeper's Associations, Street Vendors Associations, and civil society organisations, in partnership with the city government on a regular basis. Pedestrianization and improving street facilities should be given priority in land use planning through city development plans or master plans, or comprehensive mobility plans. Neighbourhoods need to build good quality social and commercial facilities within walking and cycling distance - this needs integration of land use planning and transport planning, which often operate in silos. Political representatives such as ward councillors should be encouraged to improve streets and roads within their jurisdiction. Most importantly, a multi-stakeholder approach is required - setting up a body/committee comprising local-level officials, engineers, urban designers, citizens groups, shopkeepers' representatives, public transport operators, IPT operators, vendors representatives, police, traffic police department, etc. Giving priority to public transport and non-motorised transport and curbing travel using personalised vehicles are therefore

the key to accessible and active cities.

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# WATER AND WASTE MANAGEMENT ROADMAP FOR PANCHKULA

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The suggestions that are being put forward to the Panchkula Metropolitan Development Authority (PMDA) are based on our own experience of working in Hyderabad and other comparable cities. Hyderabad is one of the rapidly growing metropolitan cities, but the government felt that it was time to revisit the development plan, and we called this transformation journey Hyderabad 2.0.

To bring in these innovations and accelerated transformation and to take Hyderabad to a different league of the city, the following path was charted. We try to put together some metrics in terms of water sanitation, mobility, and housing, including open data greenhouse gas reduction. What matters is how we communicate with civil society organizations, politicians, and common people. The focus would be on three ideas for us to pursue as part of the development plan, and these priorities are primarily aimed at strengthening the city from a health and cleanliness point of view. It is basically from the point of view of creating healthy cities and clean cities, which eventually contribute to enhanced livability.

The first prescription that Panchkula should pursue, and is very well positioned to do, is a continuous and pressurized 24x7 water supply. Currently, Panchkula, and urban Haryana in general, ration the water supply

and have disruptions. When you have a 24-hour water supply, the pipe infrastructure is on a positive pressure, which means all the networks are filled with water, unlike intermittent supply, like if you are giving for three hours in the morning and three hours in the evening. In intermittent supply, during the supply hours, that is three hours, the pipelines are pressurized, but during the non-supply period, the pipelines are empty. Because of the negative pressure, it sucks in contamination from the neighbouring septic tanks or sewer lines or even just simple leachate and this contaminated water goes into the network when you deliver the water next day or in the evening like in Panchkula, and then citizens get what is called contaminated water, which is why the public health suffers. Now, this is a problem whenever we have intermittent supply. Public health is compromised, which downgrades the quality of life. So, Panchkula should aim for a 24-hour water supply to minimize the risk to public health, which otherwise is a common feature in the intermittent water supply. The second problem of intermittent water supply is people store this water. Thereby, the stored water is also contaminated because of the various reasons associated with storage. From the public health benefits point of view, the agenda for Panchkula is to go for a 24-hour round-the-clock continuous water supply, and that is doable, and that should be the aspiration as part of the

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development plan. If we have intermittent supply, there is also a compromise on the household economic improvement as people have to spend time storing the water, and there is a lot of customer inconvenience. The poor people in Panchkula will end up losing their economic opportunities because of the storage of water and because of the fetching of water from a public fountain. Therefore, in all these situations Panchkula should aim for 24-hour round-the-clock water supplies. It is a misconception that round-the-clock water supply is an ambitious target in Indian cities where there's less water. It has been proven in cities of poorer countries like Phnom Penh, and Dhaka, where there is a continuous water supply. It is not the rich countries but the poor countries that deliver continuous water supply round-the-clock. Even in India, a town called Malkapur near Pune delivers continuous water supply, and recently Puri is one of the big cities which is currently delivering around the clock open tap water, where they can drink the water from the tap and that's the agenda which the government of Orissa has taken up. As a part of the strategy, Panchkula should aim for continuous round-the-clock water supply from a public health point of view.

Agenda number two is ensuring used water treatment and safe reuse of treated water. Wastewater, called 'used water' these days, can be completely treated. We can bring the principles of circularity, where the water that has been used, can be put back in the form of a recycling strategy. The used water can be sent post-treatment back into the source. The first part of it can be sent for non-portable applications, industrial applications, horticulture applications, and Panchkula has a lot of green space and gardens where the used water post-treatment could be used rather than creating a water crisis by taking freshwater. This whole concept of circularity can be

beautifully integrated into the context of used water management in Panchkula without spending too much money. It brings in water security, improves public health, and also improves the river. In Panchkula, we should be looking at a framework for safe use treatment of water, what we call safe reuse of treated water, which should be the framework as part of the urban agenda. Very few cities have done it, and Panchkula has an opportunity and has all the right ingredients, has good green space. Used water management through circularity through safe recycling of treated water can be the agenda for Panchkula, and it can be done beautifully. The business models too are easily available, and we need not invest too much money. Surat is a good example where they treat the used water and have created a business out of it. Surat currently generates 140 crores of money annually by the sale of treated water to various industries. They sell it at 30 per KL of the treated water to industrial areas, and the strategy of Surat city is that 70 percent of the sewage that they want to use they convert into recycled water, and the balance will be sent out for the water bodies, drains and water streams. Therefore, there is a beautiful business model available in which, without spending money, we can create a very nice circularity in the used water management space. Chennai is also doing a similar model. Chennai has serious challenges with fresh water, so it is necessary for them to recycle the used water, not only for industrial application but recycle the water and put it back into the water bodies so that this water can be used for drinking water applications. It's called indirect usage of water. Panchkula being a small town, that is rapidly growing, can easily retrofit with tertiary treatment and create a very nice used water recycling strategy.

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The third agenda is garbage-free Panchkula which can be easily thought through. When we say garbage-free, it means nothing should go for land application, and everything can be created in such a way that no land will be consumed. We need not create another dumping ground or augment the existing dumping ground, rather we can reclaim the dumping ground. While we reclaim the dumping ground, the city should have a garbage-free plan in place. Panchkula is well-positioned to do it. We need to move away from a linear economy where we bring in material from resources, convert it into some products, and then dispose of it after a bit of recycling. This model is not going to be economically sensible. So now, the world over and in India, we are moving towards what we call recycle, produce, use and again recycle model. It's through prevention and diversion, but Panchkula can think of a situation where it will not send any waste to the land application, rather it will recycle at different points in the service chain of sanitation, and we can think of two good examples in our country. The first one is about Panjim, where they have a landfill-free city status right now. Panjim segregates the waste in multiple fractions, not at the household level all the time, but at the material recovery facility, it can be converted into various fragments, and then the dry waste is sold or recycled. The waste which cannot be easily recycled is sent to cement industries or any other applications, and the wet waste goes through the treatment of either local composting and bio methanation as well as a centralized composting facility. We get a situation where the dry waste is recycled out, and the wet waste is converted into either compost, a soil conditioner, or in terms of power or gas. Currently, these models are matured in our country and can also generate revenue for the municipality. Unfortunately, we are not putting sensible models in place

because of various administrative and political reasons. Another example, which all of us are aware of, is the Indore case where they have an excellent public-private-partnership model for segregation of the dry waste and where the kabaddi wallahs and safai mitras bring the waste and they get paid for it. It also runs a beautiful material recovery facility for the dry waste, and the wet waste goes through composting, bio methanation, and various processes. Now they are coming up with a program, completely through the PPP model and with no investment from the municipality. They get a premium. In this program, the waste is converted to gas which is used as fuel to run the public transport buses. The waste is not going to the landfill, rather it is getting converted to gas, and gas is used to use as a clean fuel to run the public transport in Indore. This model can be replicated without any effort in Panchkula, and that is the prescription for Panchkula from a public health point of view, from a cleanliness point of view, and livability point of view.

To summarize, Panchkula can become garbage-free, and it can aspire zero-landfill situation if we can invest right now as part of this strategy to segregate the waste at the source, which already Panchkula is doing well. It is in the third position on the Safai Suraksha challenge but 99 in terms of ranking across the country, so it has to invest a little bit of soft power and create behaviour change. If we can segregate the waste and encourage segregation waste at the household level, the business models are readily available for replication without much effort. All of the ideas we discussed can be done through a public-private partnership model, considering this is a very vibrant private sector. PPP models have been implemented through hybrid annuity models, which is a new way of making the projects viable. We can introduce another

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model if there is an asset like a sewage treatment plant in Panchkula, which doesn't have tertiary treatment or the capacity is inadequate. We can go for refurbishing, finance, and operate the model. The private sector will come, refurbish the plant, upgrade it, invest some money, and then operate it, and then they take the revenue by sale of the water or through revenue from the municipality. These are basic ideas and have to be prioritized as part of your development plan. We have to prioritize health, cleanliness, and liveability as a priority. Wastewater management, water management, and sanitation-related issues should be prioritized in the next three to five years through which we can fix these problems and become one of the global cities and one of the leading cities in India.

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# TOWARDS A ZERO-DISCHARGE CITY: SOLID WASTE MANAGEMENT AND WATER PROVISIONING IN PANCHKULA WITH THE MOTTO "DREAM PANCHKULA, CLEAN PANCHKULA"

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Traditionally, Municipal Solid Waste Management (MSWM) is a major municipal concern, posing several political, social, and/or financial challenges. This impact is aggravated with socioeconomic evolutions, including population growth, income increase, and changes in consumer behavior, leading to continuously increasing waste generation rates. Lack of proper management and increasing waste generation rate exacerbates air pollution problems, land contamination, and water quality degradation. It constitutes major threats to the environment, the economy, and human health. In developing countries, SWM is characterized by low collection rates, high rates of open dumping and/or open burning, low rate of high-value recycling, lack of awareness, and financial, technical, behavioral, and institutional challenges at local and national levels for effective MSWM.

Moving forward, the issue of waste management is at the forefront of the government's priorities. The Indian

government has taken up the issue of Swachh Bharat at a national level. The Clean India initiative is a people's movement, and Jan Andolan is done through citizen engagement and awareness generation in all strata of society. It is achieved through the Swachh Survekshan, which rates the cleanliness of Indian cities. There is also the Star Rating of Garbage Free Cities (GFC), whereby cities can rate their cities as garbage free along with third-party verification. The CPHEEO guidelines include the need for awareness generation at each stage of the waste value chain, and the Swachh Bharat E-learning Portal has capacity building for municipalities across India to achieve the Swachh Bharat Mission. Cities like Panchkula must follow the guidelines as given in the CPHEEO manual and the Star rating system for garbage-free cities to score highly in the Swachh Survekshan. The Swachh Bharat E-learning Portal will provide useful tools to build the capacity of the municipal officials tasked with improving SWM in the city.

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The presentation on Moving Towards a Zero-Discharge city: solid waste management and water provisioning in Panchkula outlines the current status of MSW management in India and the need for stakeholder engagement as we move from centralized to decentralized SWM. Traditionally, solid waste is handled outside city limits by the informal sector, which is ostracized by society. Waste management attitude in public is that of NIMBY (Not In My Backyard). But with a lack of space and increasing waste generation, it is essential to safely move from NIMBY to YIMBY (Yes In My Backyard) with the institution of decentralized waste management models, including integration of the informal sector.

The need for source segregation along the solid waste value chain is described as we aim to achieve landfill-free cities and reduce the GHG emissions from the waste sector. Common solid waste treatment technologies are described and include composting, anaerobic digestion, production of fuels from wastes (refuse-derived fuel), and incineration. Composting and anaerobic digestion are two of the greenest technologies that should be used as they help divert organic waste from landfills and reduce GHG emissions from the solid waste sector. Best practices from cities like Indore should be explored to be scaled and replicated in emerging cities like Panchkula. The political and administrative will and public participation models in SWM of Indore should be replicated. Waste management and associated uptake of waste materials should be done digitally, and the example of Recykal, a digital platform model is described to ensure the flow of waste that is transparent and traceable with an end-to-end solution. The role of EPR for efficient collection of recyclables like plastics and electronic waste is essential to ensure

valuable recyclables and potential secondary raw materials do not find their way into landfills.

The presentation also looks at the current status and need for wastewater reuse. Water scarcity is not a new issue. With increasing consumption and no accounting for losses, water scarcity is a growing giant. Lack of fresh waste access is a major cause of water-borne diseases around the world. Goal 6 of the SDGs is to ensure availability and sustainable management of water and sanitation for all. Each small step taken in the direction of targets set by UNDP shall lead to the greater goal of a sustainable future for all. A Holistic (waste) water management approach is needed for the recovery of water, energy, and nutrients from urban wastewater. It will lead to a reduction of the “expensive” drinking water use and clean the wastewater of new contaminants, including heavy metals and pharmaceutical drugs.

The stakeholders are mapped across the wastewater value chain. For wastewater generation and reuse, stakeholders include domestic, industry, public agencies, and agriculture. For treatment and supply of wastewater, the government and private sector are key stakeholders, and for regulation, the national level ministries, state pollution control boards (SPCB), and municipalities for effective bye-laws are held responsible. The municipality and the Jal board are responsible for providing water however the water quality is monitored by the pollution control committee.

The benefits of wastewater reuse and challenges in its uptake are described. The benefits include reused water available for agricultural purposes, reduced pressure on freshwater, increased groundwater table,

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prevention of river pollution, and improved health and sanitation of citizens, especially those living close to open, untreated sewers. The mechanisms of wastewater treatment, including the Zero Liquid Discharge (ZLD) treatment used in industries, should be explored further to treat new and emerging contaminants in waste, including heavy metals and pharmaceutical waste. Currently, to achieve ZLD, many industries are using Reverse Osmosis (RO) process, which is not environmentally friendly, as it requires electricity, produces chemical and membrane waste, and generates reject wastewater that is hard to dispose of. It is recommended RO processes be limited to places requiring high-quality water from treated wastewater.

Currently, the sludge produced during wastewater treatment is not used, and no regulation supports its treatment and safe disposal. Moving forward safe and effective sewage/ sludge treatment and disposal is needed. It may be according to the EPA 503 Biosolids Rules, which establishes criteria for various modes of disposal of sludge - land application, surface disposal, and incineration. For land application (which is preferred) following criteria must be achieved: concentration limit of 10 trace heavy metals; vector attraction reduction; and pathogen reduction.

# Towards a Zero-Discharge City: Solid Waste Management and Water Provisioning in Panchkula with the motto “Dream Panchkula, Clean Panchkula”

Mr. Sunil Aggarwal  
Programme and Partnerships Leader,  
Toilet Board Coalition & Former-Director, Smart Sanitation City Project

As Panchkula embarks on a journey towards being a metropolitan area, it is pertinent that the planning authority of the region attempts to learn from the experiences of other metros in the country and steer clear of the usual traps in planning based on land use. Currently, none of the cities in the country can claim to have achieved zero-discharge status – when it comes to managing its solid and liquid wastes.

With the launch of the Swachh Bharat Mission by the Government of India and the boost it gave to the innovators, the sheer number, type, and quality of innovative solutions in addressing sanitation challenges are quite large. There are now multiple solutions available that can be deployed at a fraction of the cost and time of conventional ones.

While cities are working with small and medium entrepreneurs (SMEs) in piloting piecemeal solutions, Panchkula city has an advantage to look at these solutions holistically and plan for its sanitation needs comprehensively – some of which could involve exploring decentralized, smart, and customer service-based solutions that can help the planning authorities and the

citizens. These solutions could range from providing access to clean, safe, and hygienic sanitation facilities in the form of public and community toilets, safely managed decentralized treatment solutions, digital solutions to monitor the transport and treatment of waste, and capture user behavior intelligence and data related to operation and maintenance (O&M) of these facilities.

All these are dependent on the planning authority creating policies that enable private sector participation in the form of Public-Private Partnership (PPP) models. The private sector brings in innovative solutions and capital as required, provides O&M services, and in the process, creates safe, dignified jobs for the local communities. The public sector provides an enabling framework that includes access to land, unlocking of revenue streams through user-fee models, as well as establishing mechanisms that encourage the re-use of treated products. Of course, the public sector also takes up the role of being a regulating and monitoring agency.

The Toilet Board Coalition (TBC) works with

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businesses, investors, and governments to scale market-based solutions to universal access to sanitation. The TBC has framed the opportunity of the Sanitation Economy and has assembled growing evidence of significant new benefits for business and society across sectors – an estimated \$148 billion annual opportunity by 2030 in India alone. The Sanitation Economy leverages innovative toilet design, recovery of biological resources within the Circular Economy, and smart digital technologies driving preventative healthcare to create a double win – accelerated scale-up of sanitation, together with multiple business opportunities.