

# DIFFERENCE BETWEEN ‘PROJECTED’ AND ‘REAL’ CITIES: a Case of DELHI

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## Abstract

In Delhi, water supply seems adequate in a residential colony whereas the adjacent colony does not enjoy the same. Regular newspaper reporting for water supply in the city also supports this observation. While travelling within the city, one may also perceive that even on one road, a stretch of it is maintained regularly, while another stretch is not. Quite often, disparity in maintenance and the status of roadside drainage and cleaning up of garbage from the vats across various residential colonies may also be found. In independent capacities, concerned authorities, by and large, form certain exclusive territories of jurisdiction, which, often, do not match with one another. Though the very conception of the MPD started along the ideological line of broad National policies of the Union Government; its planning ideals, somehow, do not get recognized in a situation, when there appears an imbalance in the urban management in terms of operations and maintenance of basic infrastructural facilities.

This paper attempts to build upon these general observations by drawing relevant references from the city of Delhi, and indicates a possible theoretical condition for ‘City Reading’ by understanding and conceptually exploring the notion of ‘differences’. Delhi’s *physical existence* as a result of the ‘welfare-state’ Master Plan model of development process; *social existence* of varied interest groups and stakeholders – make this city a case in point. Here, one is interested to know, in particular, how such ‘differences’ may be noticed in the distribution and delivery of basic urban services, e.g., operation and maintenance of water supply in residential colonies/spaces. In the process, this paper also tends to construct certain notions of relationships among *Planning Intentions*, *Political Initiatives*, *Service Delivery Pattern* and *Socio-Economic Groups*.

## 1. INTRODUCTION

### Infrastructure, Planning and Social Aspects of City

Why do we need to discuss infrastructure while discussing planning? Many believe that planners must recognize the urban processes that are inclusive of the social, physical (including natural) and economic networks and subsequently looking for strategies to improve those processes would, thus, be among the prime objectives of the planning works and decisions.<sup>1</sup> Now the question arises, what relations do urban infrastructure and its network tend to establish with the social aspects of the city? When infrastructure is rightly conceived “as more than just the Pipes”, inter-relations between social and physical networks of the city are also recognized in which infrastructure is seen as much a social process as a technological one.<sup>2</sup> As Graham and Marvin comments, urban infrastructure and its layout should not be studied solely by the engineering and economic aspects, and must not be excluded from

the political and social processes that manage them.<sup>3</sup> Taking similar positions, Albert Pope extends the discussion at the physical planning and urban design scale, when he argues that “social organization at the deepest level of urban existence”, in both historical and contemporary times, is embedded in the ‘street infrastructure’, referred as layouts of networks of water, sewage, power grids and paved walks/ roads etc.<sup>4</sup> Master Plan of Delhi, too, albeit at a simplistic operative level, identifies infrastructure as a three-fold operation: Physical infrastructure, including water supply, sewerage, drainage, electricity supply, sewage and garbage, Social infrastructure, including educational, health, communications and security facilities and Transport related to road.<sup>5</sup>

However, this paper shall focus on the ‘Water Supply’, mainly its Operation and Maintenance (O&M) aspects, as one of the key components and indicative of the basic urban services. Water supply is essentially considered as a ‘public good’ to be supplied by the government and in Delhi, the city discussed here, it is one of the major responsibilities of the Delhi Jal Board (DJB), a public body under the State government. Now the question is how the O&M of the water supply takes cognizance of diverse socio-economic groups and spaces of the city of Delhi.

## **2. A CASE OF DELHI**

### **2.1 A Brief Introduction**

After the independence of India in 1947, along with the adaptation of lots of existing administrative and political systems of the British Raj in free India, the colonial capital city of New Delhi also became the capital of the new ‘democratic’ country. At this juncture, the city had witnessed a decennial growth of 90% of population when large number refugees poured in due to the partition (Table 1). This sudden increase of population led to unplanned residential sprawl and growth of the informal sectors as its source of economy. To address these issues in the capital city, Delhi Development Authority (DDA) was set up as per the Delhi Development Act 1957, to formulate the Master Plan for Delhi (MPD) with a view to ‘rationally’ control the urban growth through comprehensive planned development. Planning of post-independent Delhi, in a way, was an outcome of the centralization process, modernized development and planning policies of the Nehru government within the broader political ideologies of the time;

“In order to realize the objective of Congress ... and to further the objectives stated in the Preamble and Directive Principles of State Policy of the Constitution of India, *planning should take place with a view to the establishment of a socialistic pattern of society*, where the principal means of production are under social ownership and control, production is progressively speeded up and *there is equitable distribution of national wealth.*”<sup>6</sup> (Italics mine)

### **2.2 Difference between projection and reality: Master Plans of Delhi**

In the First Master Plan of Delhi (MPD 1961), for planning purposes, Delhi has been initially divided into eight Planning Divisions, further divided into 136 development zones, primarily on the basis of the physical features, historical growth, character of development, intensity of land use and the circulation pattern.<sup>7</sup> The purpose of making these divisions was also to have more or less ‘self-contained units’ for purposes of living, employment and recreation. The most important distribution strategy adopted by the MPD 1961 was to ‘decentralize’ places of employment and their relationship with the residential areas with a view to secure “balanced development and minimize friction”.<sup>8</sup>

The Second Master Plan of Delhi (MPD 2001) intended to continue with the similar visions of the MPD 1961. However, it recognized the shortcomings of the implementation of the previous Master Plan and held certain important aspects like, rapid urban population and employment growth, land use

permissibility, and use intensity, informal sector and incompatible uses along with an absence of a “monitoring system to register the changing socio-economic profile of the community as well as the physical structure of the city”, responsible for the gap in planning and implementation.<sup>9</sup> The population of Delhi in 2001 was 137.8 lakhs as against the MPD-2001 projection of 128 lakhs. This has had its inevitable implications and impact on shelter, including squatter settlements and other infrastructure facilities.<sup>10</sup>

**Table 1: Growth of Population in Delhi**

Year	Population (in lakh)	Decennial Growth	Population projections (in lakh)	No of Squatter Families*
1941	9.18	44.3		
1951	17.44	90.0		12749
1961	26.59	52.4		42815
1971	40.66	52.9		62594
1981	62.20	53.0	52.57	98709
1991	94.21	51.5	91.02	259344
2001	137.83	46.3	128.10	

Source: Census of India, Registrar General of India.

\* Slum Department and JJ Department, Delhi Slum Improvement Board, Municipal Corporation of Delhi (Based on record of Food and Supplies Department)

Both these Master Plans, many feel, might have anticipated a pattern of growth but could not identify the influencing economic factors, like the informal sectors, the nature and composition of the growth and its implications for the cityscape in terms of housing, productivity and infrastructure.<sup>11</sup> Although one of the stated objectives of both the MPDs was the “elimination of slums and squatting and provision of adequate housing and related community facilities”,<sup>12</sup> but both the Plans, somewhat helplessly, witnessed further proliferation of slum settlement (Table 2) along with other insufficiencies in housing and community facilities. This has led to two broad variations to the situation resultant of the ‘differences’ between the projections of the MPD and ground realities: 1) emergence of the diverse socio-economic groups leading to the ‘Two Cities’ notion and 2) a gap in infrastructure projections and its provisions to the people of the city.

### 2.3 ‘The Two Cities’ notion

The undercurrent of the ‘Two City’ notions has always been based on realizations of inequalities broadly in social, economic and physical aspects of the city. It appears that more than half of Delhi lives in some kind of informal settlements, as classified in Table 2.<sup>13</sup> Apart from these types of settlements, city also has Pavement Dwellers estimated about 70 thousands people, living on the pavements in busy market places in the city where they work as wage earners.

In case of Delhi, this argument in discussing production of spaces mainly hinges upon the co-existence of dualities: planned and unplanned colonies, formal and informal economies etc. Dominant views of the city planners and administration on these dual conditions of living were broadly Malthusian in its apprehension: *more people means deterioration of resources*. In turn, it observed the ‘unplanned’ living as the conditions of living by the poor who are considered as the violators of the Master Plan by encroaching or polluting the environment.<sup>14</sup>

However, recent Supreme Court orders ‘to clean up’ Delhi exposed many other ‘violators’ of the Plan, including the Government and its agencies as well.<sup>15</sup> Alternative critical positions, to an extent based on the notions ‘informal economy’, consider above views of the ‘dual’ urban condition of opposites as

mistakes and, instead, discusses the inter-relation between the two as a ‘mutual’ dependency between the ‘formal’ and the ‘informal’. Most of these arguments identify indifferent state interventions in social and urban terms and tend to explain that indifference by broadly situating itself within the generic city reading arguments of social inequalities for ‘the structural reasons’ of the accumulation process<sup>16</sup> or ‘state apparatus favouring the rich’.<sup>17</sup>

**Table 2: Year 2000 population by settlement type**

No.	Type of settlement	Approx. population in millions	% of total Population
<b>‘Informal’ Settlements</b>			
1	Slum clusters	2.072	14.8
2	Slum designated areas	2.664	19.1
3	Unauthorized colonies	0.740	5.3
4	Resettlement colonies	1.776	12.7
5	Urban villages	0.888	6.4
6	Rural villages	0.740	5.3
7	Regularized unauthorized colonies	1.776	12.7
<b>‘Formal’ Settlements</b>			
8	Planned colonies	3.308	23.7
<b>Total NCT of Delhi</b>		<b>11.964</b>	<b>100.0</b>

Source: Status Report for Delhi 2021 by Ministry of Environmental & Forests and NCT of Delhi Planning Dept.

## 2.4 Difference between Planning and Implementation: A case of Basic Services

The vision of MPD 2021 recognizes two situations in terms of Basic Services: Planned Provisions and Delivery on ground and feels that, while using the method of population growth projections as the determinant for projected requirements for various basic infrastructure services, “there has been very little practical convergence between the Master Plan and the actual development of infrastructure services”.<sup>18</sup>

**Table 3: Availability and Projections For Physical Infrastructure Components in Delhi**

Physical Infrastructure components	1981			2001			2021	
	A	B	C	A	B	C	A	Additional for 2001-2021
Water (mgd)	250	496	253	1127	1096	650	1150	500
Sewerage (mgd)	200	397	118	902	877	5122	920	408
Power (mw)	558	650	--	4000	3265	2352	8800	6448
Solid Waste (tons/day)	2300	2568	2058	6735	7100	5543	15750	10207

Note: A: Projected requirement, B: Necessary requirement on ground, C: ‘Real’ Availability on ground  
Source: Delhi Development Authority, MPD 2001, MPD 2021

A closer review reveals the ‘differences’ among ‘projected’ and ‘necessary’ requirements as well as the ‘real’ availability of resources on ground for provisions of physical infrastructure (Table 2). In 1981, planning projection has gone terribly wrong in considering ‘to *how many people* (whom) the resource is to be distributed’ and in 2001, in ensuring ‘*how much resource* (what) is available for distribution’. Similar observations with respect to the domestic water supply situation underline the point even more, when in 2001-02 sale of water for domestic purpose was 1124 TCMD (Thousand Cubic Meter per Day), about 750 TCMD less than what the demand would have been. It is thus, obvious that the total domestic water supply was much less than the projected one.<sup>19</sup>

While looking at the per capita domestic water requirement, the domestic daily per capita water demand as per DJB records, 121 lpcd (liter per capita per day), appears about 10% less than the standard norms/guidelines of 134 lpcd (laid down by CPHEEO/MoU) and 20% less than the figure of 145 lpcd came out of “Willingness to Pay” (WtP) survey conducted in the “DWSSP – Project Preparation Study for water supply in Delhi”. However, as per MPD 2021, DJB is planning to improve the situation by adopting the domestic consumption as 172 lpcd with 15% distribution loss.<sup>20</sup>

Above observations, indeed, indicate the fact that water supply is a scarce resource distribution in Delhi. That leads to the question when there is a difference in the demand-supply, how is the notion of equity envisaged in the welfare planning model of MPDs to be ensured in the city? Since a government body like the DJB is responsible for the distribution of water to residential colonies, one would expect an equitable distribution/ supply of water, distributed, across the colonies – but on ground, it also varies spatially from colony to colony. Water supply seems adequate in a residential colony whereas the adjacent colony does not enjoy the same. Regular newspaper reporting for water supply in Delhi reinforces this observation.<sup>21</sup> MPD 2021, too, acknowledges this point. Also, a detail report on situations of water supply in Delhi underlines the locational (thus, territorial) unevenness when 50% of revenue zones of the DJB have an average supply of about 25-30m<sup>3</sup>/m (cubic meter per month), 6 zones have up to 73m<sup>3</sup>/m and 8 zones have about 2m<sup>3</sup>/m and to provide water to the areas not covered by the distribution system, DJB supplies water by tanker service”.<sup>22</sup>

Relevant points that emerge here are mainly twofold: a perception of uneven spatial distribution of water and a prevailing hint of difference in the operation and maintenance of water supply across residential colonies. Corresponding queries are whether there is a pattern in this unevenness or the differences. To delve into those aspects, one may need to look into certain related theoretical notions for initiating a process of identifying operative indicators.

### 3. THEORETICAL NOTIONS

#### 3.1 Notion of ‘Other’ Spaces

The main concern, here, is with spaces, particularly in an urban situation. This paper begins with the key theoretical problem that, “Metropolis is the extreme utopia of rationalization and the site of that rationalization’s failure...”<sup>23</sup> This rationalization, to a great extent, is the instrumentalization of the theories of planning that Lefebvre understands of Marxist concepts on theories of the organization of production.<sup>24</sup> Utopia of rationalization, here, refers to the ‘Projected City’ that presents the perfect and ideal form of the society and in the case of Delhi, the way planning process and the Master Plan document intend the city to be. The notion of the ‘Projected City’, thus, may be compared with the Foucault’s notion of ‘Utopia’--“sites with no real place”.<sup>25</sup> Whereas the Site of the rationalization’s failure, here, signifies the ‘Real City’, one that exists on ground and consists of external real spaces socially produced and actually lived. The understanding of Real City and its relationship with the Projected City, to an extent, what, Michel Foucault refers to as ‘Heterotopia’.<sup>26</sup> Heterotopia is often related to ‘other’ conditions of spaces and of times: a *detached heterogeneous* space within/among *spatial continuum*, a *discontinuity* in time, an *interruption* of sorts.<sup>27</sup> Heterotopia also has a “topological sense”, in which properties are unaffected by changes of shapes and sizes.<sup>28</sup>

Other notions of Foucault that may be quite useful and supportive in this connection are ‘discipline’, ‘docile bodies’ and ‘carceral system’.<sup>29</sup> ‘Discipline’ is identified by him as a range of ‘techniques and methods of controlling bodies in space’ and ‘arrangement of movements and experiences in space and time’ and has three key elements: ‘hierarchical observation, normalizing judgment and examination’. ‘Docile Bodies’ may be applied as a possible ‘analogical’ way of looking at modern cities and

planning processes. City can also be conceived as 'body', subject to discipline and control where 'docility' is achieved through the methods of discipline: 'the art of distributions', 'control of activity', 'the organization of geneses' and 'the Composition of forces'.<sup>30</sup>

Henri Lefebvre has very well defined the differences between a physical versus a more socially based spatial understanding. In his perspective, the space of society, as social spatiality, is seen as simultaneously perceived, conceived, and lived, or as he also explains them, as "material Spatial Practices, evocative and imaginative Representations of Space, and the complex, combinatorial, and never fully knowable Spaces of Representation".<sup>31</sup> More recently, having taken clues from Lefebvre, Edward Soja propagates the notion of 'Third Space' where spatial, temporal and social concerns of spaces are blended together.

### **3.2 'Analogical' Applications**

Thus, one may observe in MPDs, on one hand, the logic of 'hierarchy' as the 'art' of distributions of resources of human (people, their place of living and work), economic (commerce and production) and physical (including infrastructure and natural components) and on the other, the 'techniques of controlling activities over physical space' by compartmentalized, spatial distributions of land use (by single use zoning techniques) and corresponding management strategies (enlisted as permissible use categories, overseen by monitoring agencies). However, the differences between projections and reality, in this case the water supply in Delhi, defy the very logical intentions of its distribution. As a consequence, the given distributive nature of the spatial and resource hierarchy of the MPDs and its utopia (the projected city) gets 'imploded' within itself because of important logical components of that structure, thereby disturbing that very structure. These notions in reading of a city, in general, and in understanding the distributions of physical infrastructure (e.g. water) in Delhi, in particular, give an analogical understanding of 'city as a body', But the Foucault's 'city as body' undergoes changing structural relations within its structure leading to possible 'other' anatomies that may be different from one another. Relations between utopias and heterotopias in a city, here, are not necessarily binary opposites as observed within the paradigms of 'two city' notions and, thus, their relationships are continuously re-structuring itself, both socially and physically, by being "simultaneously represented, contested and inverted" within the Real City.<sup>32</sup> Lefebvre's concept of space being 'active' also relates to this view.

What all these views do is to give hints to discuss space and therefore, the city not as a composition of binary entities, whether socially (rich-poor), temporally (old-new) or physically (dense-open), but combinations of alternative relations among them. A conceptual framework of 'multiple patches' of city, thus, emerges that relates to the changing links with each other. Now the question is, within all these broader theoretical notions, what are the operative possibilities of engaging with city?

## **4. OPERATIVE INDICATIONS**

Since, distributional aspects of availability and accessibility of services to physical spaces are related to the location of areas of living and social groups in the city,<sup>33</sup> for further conceptual explorations in the particular context of this paper, notions of 'distributive possibilities' of basic services like, water may be discussed in relation with some important indicative operative factors involving planning, politics and socio-economic groups/ spaces.

### **4.1 Distributive possibilities**

Then the question arises, what is the 'just distribution' of the access of urban services and how is that ensured across diverse socio-economic groups? The concept of "a just distribution justly arrived at", according to Harvey, outlines the notion of 'social justice',<sup>34</sup> that raises certain pertinent issues and factors for 'social justice' at the outset: 'the pattern of territorial political power', 'allocative mechanism' of institutional and organizational nature, governing rules for 'the pattern of territorial negotiations' and the relevance of 'social and physical environment'. To sum it up, it becomes important to look at the *territorial inter-relations among politics, urban governance and management, socio-economic spaces, urban form* as indicators for understanding the notions of 'just' distribution and therefore, the 'social justice' in an urban condition.

On similar ideologies, many theoretical arguments in planning are carried forward under the notion of 'equity'<sup>35</sup>, which Fauconnier defines as what "denotes ideas of social justice, equality, and fairness across groups. Because it (equity) is an inherently subjective ideal -- and not an ideal for everyone -- it has often remained outside of the scope of economics, which itself remains dominant in the realm of public policy making."<sup>36</sup> Specific to the notion of equity in water services, three parameters may be identified: *physical access* to safe drinking water, *economic access* or affordability, and *access to planning and decision-making* for the services.<sup>37</sup> While the first two parameters refer to the aspects of accessibility and affordability respectively, the third one relates to the planning and political processes. In general, concepts of equity may carry four different meanings: *Vertical/Distributional equity*, based on 'ability to pay' or affordability principles; *Horizontal equity* related to the notion of same price for same amount of benefit for any good or service across all groups, *Geographical equity*, referred as the equitable distribution of services across different geographic locations and *Intergenerational equity*, a concept useful for the evaluation of environmental impact of resource consumption (e.g. water).<sup>38</sup>

In the context of O& M of water supply in Delhi, as the mismatch between demand and supply at various scale levels gets revealed in the discussions on the difference between Planning and Implementation in section 2.4 of this paper, the concepts of 'vertical/distributional' and 'horizontal' equity may be introspected into. In other words, it would be rather interesting to see whether the unevenness in the O& M of water supply, a scarce resource to begin with, has any pattern of distribution across that corresponds to the first two concepts of equity. Therefore, *the first research agenda* shapes up with the inquiry to understand *whether territorial planning intentions or socio-economic spaces/colonies have any relation with the uneven distribution of water supply in Delhi*.

## 4.2 Territorial Politics

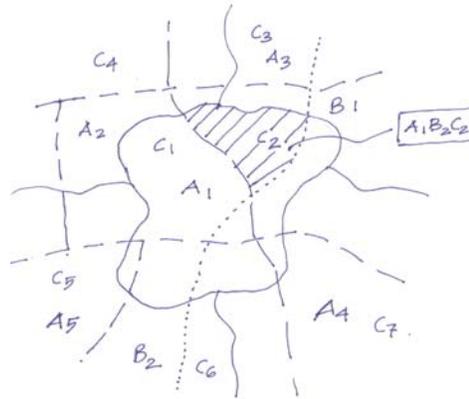
Organized effort by the government and the private enterprises in necessitating the growth distribution is, often, the "essence of local government as a dynamic political force".<sup>39</sup> The "politics of distribution" at the local level is thus responsible for the actual distribution of goods and services in the society, and the corresponding political process, largely coming out of some unseen negotiations, determines the material gains by whom, what, where and how.<sup>40</sup> This understanding falls within the Weberian notion of the city as a fundamentally political entity that combines institutional rationalization, bureaucratic administration and politics.<sup>41</sup> More importantly, also emerges an outline of a framework of linking the city and the political process of territorial domination, used by Weber in discussing the very concept of 'an urban area' (that dominates its regional territory).

Above discussions, to an extent, lead to evolving a framework to observe inter-relations of intra-city territories of political dominance as well as areas of material gains (e.g. better O&M of water supply) within a particular political territory. Intra-city political domination may happen when the political representative of a political territory is aligned with the ruling party, a notion that can possibly be linked with the explanations of 'electoral connections',<sup>42</sup> or popularly known in India as 'vote bank

politics' that tends to dictate higher level of investment (and therefore, provision of extra services) to attract votes. In this context, initiatives from the M.Ps (MPLAD), M.L.As (MLALAD) and Municipal Councilors (Councilor's Fund) in Delhi may get reflected in certain aspects of the overall infrastructure maintenance and urban management in their respective constituencies.<sup>43</sup> So, the second research agenda may be to find out whether *territorial political initiatives influence (or dominate) the decisions in managing the water supply at the local level.*

### 4.3 Socio-economic Spaces

Socio-economic Spaces, for want of a better phrase, for the time being, intends to stand for an optimism to encompass social groupings and conditions of urban form by involving notions of spatial, temporal and social concerns, discussed by Lefebvre and reinforced by Soja. Here, for theoretical grounding, one tends to fall back on the introductory discussions by Bridge and Watson on concepts of 'division and difference' in cities due to the concentrations and dispersions of certain indicative patterns of existence in which different spatial formations or localities or colonies may be understood as per distributive presence of land use, wealth and poverty (income), housing type, social mix, economic activity, density, urban form etc.<sup>44</sup> At this point, it may be, perhaps, apt to look at the specific context of Delhi to see the prevailing formulations of such spatialities.



**Figure 1: Conceptual overlapping of territories**  
**Jurisdictions: A: Political, B: Planning, C: Infrastructure**

MPDs, in general, identified 8 types of settlements primarily based on their historical existence and presence outside the planning intentions, thereby subserviently commenting on the prevailing conditions of living in those settlements (Table 2). Other planning considerations in MPDs are also the sequential allocations of land for particular use by distributing a projected population over a fixed and given piece of land. As a result, these distinctions of the settlement types came up as left-over areas outside the planning process. MPDs also divided the city of Delhi 8 planning divisions and 138 planning zones for self-sufficient planned growth. Apart from that, Delhi initially had political spaces of 7 Parliament constituencies, 70 odd Assembly Constituencies, about 134 Municipal Wards, undergoing a delimitation process at present. Also, there are separate divisions for territorial distribution of basic services. For example, in 2003, for distribution of water, DJB (Delhi Jal Board), DJB had 12 zones, which were later increased to 21. Also, Municipal Corporation of Delhi (MCD) identifies 8 Property Tax Zones (A, B, C, D, E, F, G and H), based on general understanding of conditions of living (or 'quality of living') incorporating amount of open spaces, density, land use etc.. All these divisions, primarily distributive in nature, are mutually exclusive jurisdictional control over city spaces in planning, political and managing terms (Figure 1).

However, connecting the notions of distributive justice and equity, the idea of Taxation appears as a possible, yet indirect, indicator for conceptually different theoretical and empirical works. For example, John Rawls' proposition for working towards 'just distribution' a model of fourfold division in government is suggested in which he suggests the need for a *distribution bench* for the provision of public goods and the prevention by proper taxation of 'undue' concentration of power or wealth over a period.<sup>45</sup> In the case of Delhi, it may be a working possibility of continuing with the property tax zones as *indirect indicators* for the 'Socio economic spaces' for its inherent parametric considerations of some aspects of urban form (physical spatiality) and land use considerations which cut across the dual notions of planned and unplanned colonies of the MPDs. Therefore, the third research agenda starts reckoning, which is to find out whether *Property Tax zones (territorial socio-economic spaces/colonies) have any relation with the pattern of uneven distribution of water supply in Delhi*. Also a concern surfaces *whether the spatio-territorial mismatch of political, planning and service delivery jurisdictions have any implication on that pattern*.

## 5. CONCLUSION

Involving these research agendas will then require an *activity*, similar to tools or techniques in conventional and operational sense. Since, 'discursive' spatial tendencies of territorial location and distribution out of primary concerns of planning, politics and basic service delivery, are at the focus of discussion, one potent activity, here, can be of 'mapping space' for its 'power' to be inclusive and structural at the same time.

Mapping of spaces, both 'metaphorical' or 'real, as Harvey puts it, is a basic condition for organizing knowledge that can incorporate the notion of 'power' as well.<sup>46</sup> He also argues that since social relations always exist within a certain framework of spatialities, mapping may enable one to know about one's place, 'produced' by both social and spatial relations. Also, spaces produced by institutions, according to him, are "territories of control and surveillance, terrains of jurisdiction and domains of organization and administration" of 'institutional practices and allegiances'. In such a situation, mapping becomes a necessity to trace such systems.

Maps are most popularly used in empirical analysis as investigative spatial tool of non a-priori nature. Ian McHarg pioneered one such application for ecological planning analysis in his book *Design with Nature*, where analytical mapping of various aspects over a particular spatial extent were done as separate layers. Then the layers were stacked one on top of another for non a-priori tracing of areas as per suitability scale. Similar empirical approach can also be found in a number of space-related researches as well, where 'spatial model' analysis (often through GIS applications) is used by plotting or mapping different indicators over a geographical area.<sup>47</sup>

In a condition of territorial jurisdictions of operations, as in Delhi, all these notions appear relevant.

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- <sup>5</sup> Delhi Development Authority. *Draft Master Plan for Delhi-2021*, pp 156- 161. Selection is by the author from the detailed list under broad classifications the document.
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- <sup>9</sup> Delhi Development Authority. *Master Plan for Delhi Perspective 2001*. Aug 1990, pp. I-V
- <sup>10</sup> Delhi Development Authority. *MPD 2021- Vision Plan, Introduction*. <http://www.dda.org.in/planning/docs/001-introduction.pdf> (12/04/2007), pp. i-v. (emphasis mine)
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- <sup>18</sup> Delhi Development Authority. *MPD 2021- Vision Plan, Introduction*: <http://www.dda.org.in/planning/docs/001-introduction.pdf> (12/04/2007), pp. i-v.
- <sup>19</sup> Total domestic water demands for 2004, 2005 and 2006 were 2076, 2143, 2210 (all in TCMD) respectively and the data follow a linear regression of  $67x+1808$ . Thus in the absence of the water demand data for 2001, the regression equation leads to a demand figure of 1808, 1875, 1942, 2009 (all in TCMD) for 2000, 2001, 2002 and 2003 respectively.
- <sup>20</sup> Delhi Development Authority. *Master Plan 2021*. JBA Publishers, New Delhi, 2007, p 141
- <sup>21</sup> Times News Network (TNN). Many areas in city go waterless. *The Times of India*, May 31, 2004
- <sup>22</sup> Price Water Study
- <sup>23</sup> Michael Hays, K (ed.), *Architectural Theory since 1968*, MIT Press, Cambridge, 2000. pp. 392-393
- <sup>24</sup> Lefebvre, H. 1974. *Production of Space*. trans. D. Nicholson-Smith, Blackwell, Oxford,1991, pp. 81-83
- <sup>25</sup> Foucault, Michel.1984. *Of Other Spaces, Heterotopias*.  
<http://foucault.info/documents/heteroTopia/foucault.heteroTopia.en.html>, dated (25/05/2004)
- <sup>26</sup> Ibid.
- <sup>27</sup> Georges Teyssot. 1977. Heterotopia and History of Spaces. in Michael Hays, K (ed.), *Architectural Theory since 1968* (Cambridge: MIT Press, 2000)
- <sup>28</sup> Ibid
- <sup>29</sup> Foucault, Michel. 1975. *Discipline & Punish: The Birth of the Prison*. trans. A. M. Sheridan, Penguin/Peregrine, London, 1972
- <sup>30</sup> Ibid
- <sup>31</sup> Lefebvre, H.1974. op.cit.
- Also refer Soja, Edward. In *Different Spaces: Interpreting the spatial organization of societies. Proceedings: 3rd International Space Syntax Symposium*, Atlanta, 2001
- <sup>32</sup> Michel Foucault, “Of Other Spaces, Heterotopias”, op. cit.
- <sup>33</sup> Harvey, David. *Social justice and City*. Edward Arnold (publishers) Ltd., London, 1973, p 57. Any discussion on accessibility, as Harvey puts it, also needs to address the issues and meaning of “‘distance’ and ‘space’ in an urban system”.
- <sup>34</sup> Ibid, p 98
- <sup>35</sup> Rawls, John. *A Theory of Justice*, Belknap Press of Harvard University Press, Cambridge, MA, 1971

Also refer, Bromberg, A., G. D. Morrow, G.D. and D. Pfeiffer. Editorial Note: Why Spatial Justice? *Critical Planning: Volume 14* (2007). Also refer, Deakin, E. Social Equity in Planning. *Berkeley Planning Journal 13* (1999)

<sup>36</sup> Fauconnier, I. The Privatization of Residential Water Supply and Sanitation Services: Social Equity Issues in the California and International Contexts. *Berkeley Planning Journal 13* (1999): 37-73

<sup>37</sup> Ibid.

<sup>38</sup> Ibid.

<sup>39</sup> Molotch, H. 1976. The City as a Growth Machine: Toward a political Economy of Place, in Kleniewski, N. (ed.), *Cities and Society*, Blackwell Publishing Ltd, London, 2005. pp 17-27.

<sup>40</sup> Edelman, M. *The Symbolic Use of Politics*, Urban: University of Illinois Press, 1964. Also refer, Lasswell, H. *Politics: Who gets What, When, How*. New York: McGraw-Hill, New York, 1936.

<sup>41</sup> Weber, Max. 1921. *The City*. The Free Press, New York, 1958.

<sup>42</sup> Marques, E.C., Bichir, R.M. Public Policies, Political Cleavages and Urban Space: State Infrastructure Policies in Sao Paulo, Brazil, 1975-2000. *International Journal of Urban and Regional Research*, Vol 27.4 (2003). pp 811-827.

<sup>43</sup> MP: Member of parliament, MLA: Member of Legislative Assembly, MPLAD: M P's Local Area Development; MLALAD: M.L.A's Local Area Development

<sup>44</sup> Bridge, G., Watson, S(ed). *The Blackwell City Reader*, 2002. Blackwell Publishing Ltd, USA. pp. 237-332.

<sup>45</sup> Rawls, John. 1969. Distributive Justice. in Laslett, P. and Runciman, W.G. (ed.), *Philosophy, Politics and Society* (Third Series), Oxford. Also refer, Harvey, David. 1973. op.cit. p. 109

<sup>46</sup> Harvey, David, *Justice, Nature and Geography of Difference*, Blackwell Publishers, USA, 1996, pp 111-113

<sup>47</sup> Similar concepts have been used in explaining possible reasons for changing patterns of public urban investments in the 1980s in Brazil.

See for example, Marques, E.C., Bichir. R.M. 2003. op.cit.