Politics of Access to Drinking Water in Urban Areas in India: State and Market Interventions

A Case Study of Hyderabad

A Thesis Submitted to the University of Hyderabad for the Degree of

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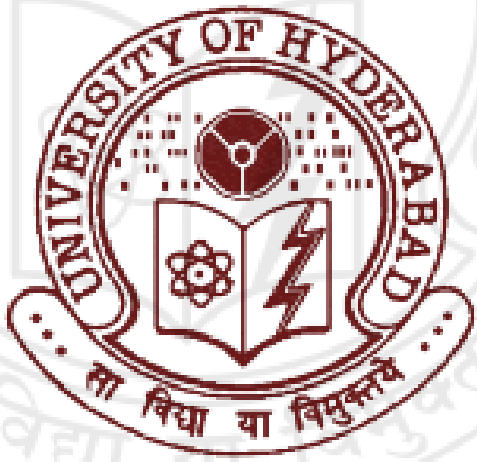

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What keeps me going is a short dictum from my father. He has regrets that he could not study. His father did not want him to study. So he became a farmer. What he reminds me time to time is: "in future you must not say that your father did not want you to study." Thus I started my journey.

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In the summer of 2006, while attending an interview for a fellowship grant for the present study at the University of Hyderabad, the experts in the interview board who learned about my research area (the politics of access to water), tried to impose the perception that water is not about politics but economics. They held that it actually falls under the discipline of economics and asked how am I going to explore it. This had an electrifying impact on my thoughts.

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Abbreviations

AJS	Agra Jal Sansthan
ARWSP	Accelerated Rural Water Supply Programme
AUWSP	Accelerated Urban Water Supply Programme
BDO	Build-Develop-Operate
BJP	Bharatiya Janata Party
BOO	Build Own Operate
BOOT	Build Own Operate Transfer
BOT	Build Operate Transfer
BPL	Below Poverty Line
BWSSB	Bangalore Water Supply and Sewerage Board
CAA	Constitution Amendment Act
CBOs	Community Based Organizations
CDA	Cyberabad Development Authority
CGWB	Central Groundwater Board
COS	Committee of Secretaries
CPCB	Central Pollution Control Board
CPHEEO	Central Public Health Engineering and Environmental Organisation
CPI-M	Communist Party of India- Marxist
CPR	Common Property Resource
CSIDC	Chhattisgarh State Industrial Development Corporation
CWC	Central Water Commission
DDA	Delhi Development Authority
DJB	Delhi Jal Board
DPSP	Directive Principles of State Policy
DYFI	Democratic Youth Federation of India
EIUS	Environmental Improvement of Urban Slums
FACA	Federation of Association of Colonies and Apartments
FGD	Focussed Group Discussion
FYP	Five Year Plans
GDP	Gross Domestic Product
GHMC	Greater Hyderabad Municipal Corporation
GO	Government Order
HADA	Hyderabad Airport Development Authority
HMDA	Hyderabad Metropolitan Development Authority
HMWS&SB	Hyderabad Metropolitan Water Supply and Sewerage Board
HUA	Hyderabad Urban Agglomeration
HUDA	Hyderabad Urban Development Authority
HUDCO	Housing and Urban Development Corporation
IDSMT	Integrated development of small and medium towns
IFIs	International Financial Institutions
IMF	International Monetary Fund

INC	Indian National Congress
IPM	Institute of Preventive Medicine
JBIC	Japan Bank for International Co-operation
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
L&T	Larsen and Toubro
LIC	Life Insurance Corporation
LIG	Low Income Group
LPCD	Litres Per Capita per Day
MCC	Metro Customer Care
MCH	Municipal Corporation of Hyderabad
MDGs	Millennium Development Goals
MGD	Million Gallons per Day
MLA	Members of Legislative Assembly
MNP	Minimum Needs Programme
MoA	Ministry of Agriculture
MoEF	Ministry of Environment and Forests
MoUA	Ministry of Urban Affairs
MoWH	Ministry of Works and Housing
MP	Members of Parliament
NBO	National Building Organisation
NCU	National Commission on Urbanisation
NRCD	National Rivers Conservation Directorate
NTADCL	New Tirupur Area Development Corporation Limited
NUIDFC	National Urban Infrastructure Development Finance Corporation
NUIF	National Urban Infrastructure Fund
NWG	Northumbrian Water Group
NWP	National Water Policy
NWSSP	National Water Supply and Sanitation Programme
O&M	Operation and Maintenance
OECD	Organisation of Economic Co-operation and Development
PFDF	Pooled Finance Development Fund
PHED	Public Health Engineering Department
PIL	Public Interest Litigations
PMO	Prime Minister's Office
PPP	Public Private Partnership
PSPs	Public Stand Posts
PWD	Public Works Departments
RGNDWM	Rajiv Gandhi National Drinking Water Mission
RWA	Resident Welfare Association
SAP	Structural Adjustment Programme
SMC	Secunderabad Municipal Corporation
SWC	Single Window Cell
TCPO	Town and Country Planning Organisation
TDP	Telugu Desam Party
UAs	Urban Agglomerations
UBSP	Urban Basic Services for the Poor
UFW	Unaccounted for Water

UIDSSMT	Urban Infrastructure Development Scheme for Small and Medium Towns
ULBs	Urban Local Bodies
UNDP	United Nations Development Programmes
UNESCO	United Nations Economic and Social Council
UNGA	United Nations General Assembly
URIF	Urban Reform Incentives Fund
UTs	Union Territories
UWSP	Urban Water Supply Programme
VWSP	Village Water Supply Programme

Chapter - 1
Introduction

This is a study on "Politics of Access to Drinking Water in Urban Areas in India: State and Market Interventions – A Case Study of Hyderabad." It is divided into seven chapters. The introductory chapter is divided into two sections. The first section presents the current debates on the issue of access to water in India. The second section presents the outline of the study, review of existing literature on the topic, the gaps, the problem of the study, its main objectives, the major arguments and the method selected for pursuing the study. The chapter gives a perspective on water from the known past to the present; how water has been perceived differently at different times. From being a community managed property or a common property resource, water metamorphosed into a commodity to be *bought* and *sold* in the market and links to the present form of society where market plays a far greater role than earlier in the allocation and distribution of essential goods and services like water. Thus, the management of water has become a complex policy issue bringing into its fold State, market and civil society, which manage this vital resource.

Perhaps it would not be an exaggeration if one says that there is no other public good than water which has down the ages influenced human civilisation, sometimes to the extent of stirring human emotions, deeply and passionately. Water is a subject of a poet's imagination, a scientist's object of experimentation, and a necessary thing for the survival of human beings and also other living things; of late, it has been a politician's promise to conquer elections, a business establishment's vision to acquire more wealth and an environmentalist's concern to conserve. Water has been subjected to various interpretations at different points in history. Water also has deep symbolic and spiritual significance in many cultures – for example, the holiness attributed to it in the context of the Indian rivers such as the Ganga, Godavari and Narmada rivers in India. Nevertheless, water serves as a metaphor in signifying the basic beliefs, values and norms governing the day-to-day actions of the members of a community in relation to the fulfilment of a very basic set of social and individual

needs.[1] Thus, a diverse set of social relations and processes testify the centrality of water.[2] However, of late, the policy line on water appears to have changed. Equitable distribution of water has become a key area for social and public policy and is acquiring growing importance in national and international development.[3]

In this context it is important to mention that two of the vanguard international agencies, the United Nations Economic and Social Council (UNESCO) and the World Bank, recently issued two separate reports which speak of water stress around the world. While UNESCO's *World Water Development Report 2009* articulated the role of water in development, it has also deliberated on the need to invest in this sector and it listed the benefits of such investments. The study by World Bank on *India's water economy: Bracing for a turbulent future,* projected the emerging crisis India is likely to face in the near future. The document categorically stated that "the current water development and management system is not sustainable."[4] One common theme in these reports is the projection of water stress in parts of the world as also in India. It is further observed in these two reports that unless significant changes are made in the methods of management of this sector, there will be a major crisis which affects development in general.

1.1 Background

Distribution of water resources has always been the central theme of political discourse. With the rapid modernisation of human society, directed towards an unquenching thirst for development, distribution of water resources in society is increasingly becoming a complex issue. Not only has this become contentious, but has also led to several conflicts and fierce competition from different competing groups. In his analysis of *authoritative allocation of resources,* Easton pointed to this situation in society, when scarce resources are authoritatively allocated through State apparatus among diverse competing groups. When such an arrangement fails to deliver, there is unrest in the society, and in the polity. Consequently it is always, in Darwinian terms, the survival of the fittest, which is not the motive of the political organisation or the State. One of the most powerful rationales for the evolution and the existence of the State is the Social Contract Theory. If one goes by the basic principles of the social

contract theory, the question arises as to whether the State (the political society) fulfilled the requirements of the contract.

Protection of life of the associates in the State or the political society being the basic premise on which the social contract theory is built, it automatically becomes the prime responsibility of the State or the sovereign to protect and make available the conditions for a comfortable life of the associates. The assumption that organisations typically exist to further the common interests of groups of people is thus implicit in the literature on organisation. Laski for example, emphasised that associations exist to achieve purposes or interests which "a group of men have in common."[5] Aristotle had a similar notion when he argued that political associations are created and maintained because of the "general advantages" they bring.[6] Mac Iver also made this point explicitly when he said that "every organisation presupposes an interest which its members share."[7] In this context, overemphasising the role of State, Mill suggested people are to be secure in each other's company. And government as an external guarantor must restrain the behaviour of those selfish men.[8] Therefore, the role of State in individual's life as the supreme political association has been emphasised over time. In contemporary times, there is no dearth of literature that speaks about the prominent role the State plays or should play in the life of individuals. Significantly, the State in contemporary times has been seen as the primary organisation that fulfils the individual's needs and necessities. Thus, Olson writes, "a State is first of all an organisation that provides public goods for its members, the citizens."[9]

On the other hand, the evolution of human society has inherently brought the competition for or scramble for the limited resources. In the early stages of development in human society, indigenous ways of life and collective management of resources by members led to a collective use of resources. This kind of approach towards managing resources where all shared the responsibility ensured the sustainable use of the resources leaving enough scope for renewability.

1.2 Water: a common property resource

Natural resources constitute an important aspect of environment. As part of the environment, water is a natural resource basic to the sustenance of human life. Natural resources have been controlled and used collectively by communities since time

immemorial. Many agree that it ensured a sustainable use of this important resource. They are primarily managed as commons or Common Property Resource (CPR). Common property is created when individual members in the community agree to limit their individual claims over a resource. They are often the result of deliberate, long-term collective action in which people gain a sense of identity and shared purpose through constant interactions over a period of time.[10] Planning and development of water resources generally begins with the expression of a common need by the intended users. The process involves mutual discussions and arrivals at a consensus by the intended users (generally a single caste or contiguous castes), who are perceived to be similar enough to share a common water source in accordance with the caste norms.[11]

Writing further on this theme, Singh wrote that the common pool resources or the commons is available for common use.[12] The participation of local user groups in the management of natural resources like water can benefit both the users and the resource. Local users have an immediate knowledge of the local resource base and the needs of users, and as direct stakeholders, they are more likely to work for the protection of resources. Local user groups are more effective than outside agencies in monitoring and enforcing rules regarding use and maintenance.[13] Thus, in the long run, failure to understand the local situations and context will lead to institutional failure. This happens because overgeneralisation of the context, consequently, undermines local identity of different groups as defined by social status, caste, class, etc. Often local user groups are defined by the State itself. In contrast, common property arrangements work because rights and responsibilities are established for all users and monitoring and accountability facilitated by individual contacts and social relations among the users.[14] Indeed, a vast body of work has documented how people collectively act and use various institutional arrangements in managing their water supplies, often under conditions of water scarcity.[15]

However, the vastness of CPR like water makes monitoring difficult and costly, and access as we as use usually cannot be sufficiently controlled by State agencies alone. Problems in the management of CPR arise when institutions have to cope with rapid changes or are artificially constructed by the State or other outside agencies.[16] On the other hand, in the struggle over the commons, nomadic groups are

losing out. These groups often are excluded from representation at the community level and consequently their legitimate access over commons. Thus, proponents of CPR management often romanticize community and ignore the larger political context and administrative feasibility.[17]

This approach to resource management, in the face of rapid changes in the human society gave way to radical changes in the way resources are managed and controlled in the contemporary times. Thus Mehta, in an interesting work related to this topic, contests the idea that water is a common good. In fact she saw it as an area of huge contestation in a community. People saw water as an issue over which they compete and are divided and it appears there is little common or collective. Social stratification and power relations in society shape water use. Local management of natural resource can be a source of conflict.[18] Members of the same community have very different access to and control over land and water resources. It is determined by factors such as feudal legacies, gender, class and caste. Water can no longer be perceived as a common good. In fact, it is a contested resource.[19] What used to be a collectively managed common property resource where all had minimum access started becoming precarious for some. Thus, access to water is an issue in the contemporary policy discourse.

1.3 Discourse on access to water

Access is all about the possible means by which a person is able to draw easily from an existing reserve. It is the ability to tap it like getting material objects, power to control persons, influence institution and decision making. Various mechanisms, processes and social relations affect people's ability to benefit from or access resources. Therefore, access relations are always changing, depending on the position and power of individuals and groups within various social relationships.[20]

There are several factors that affect a person's access to resources. Different political and economic circumstances of an individual change the terms of access and consequently, may change the specific individuals or groups who most benefit from a set of resources. There are different mechanisms such as rights-based and illicit mechanisms and structural and relational mechanisms[21] by which individuals are enabled to gain, control and maintain access to resources. Rights-based (that which is

sanctioned by law, custom or convention or legal access) access imply involvement of a community, State or government that will enforce a claim whereas in illegal access – capital and social identity have greater influence on who has priority of access to resources.[22] Privileged access to the individuals or institutions with the authority to make and implement laws can strongly influence who benefits from the resources in question.[23] Resource access is also shaped by the power to produce categories of knowledge.[24] In a larger sense, discourse and the ability to shape discursive terms deeply influence entire frameworks of resource access. Access to technology, capital markets, knowledge, authority, social identities and social relations can shape or influence access. For example, Access to tube wells, pumps and electricity can determine who can benefit from groundwater.[25]

Access to water reflects power asymmetries, socio-economic inequalities and other distribution factors such as land ownership. As noted, these closely follow the caste-based social norms where users belonging to a particular caste share access to a common water source. Infringement of the caste norms with respect to water sharing is rare, not recorded in any of the villages studied. Access to sacred sources is more or less reserved for the upper castes.[26] However, it is important to recognize that access to these basic services is not necessarily assured simply by a rise in per capita income.[27] Therefore, everyone does not have the same and equal access to water.

1.3.1 Inequality and Conflict in the management and access of water resources

Water is not only indispensable, but also scarce in quantity or poor in quality and sometimes it is both. In addition, there also exists inequality in terms of access to public goods like water.[28] Consequently, it gives rise to conflicts between the various actual and potential users. Social control over water use in indigenous systems had prevented both over-use and abuse of water, and avoided a conflict between the use of water for human consumption and its functions in the maintenance of ecological processes.[29] However, water scarcity is becoming a source of serious social conflicts among those who are the victims of water resource destruction. Many of the conflicts emerge from development interventions, which are primarily aimed at commercial exploitation of natural resources. With the expansion of economic development in

India, the resource-intensive and socially partial development is leading to social instability and conflicts.[30]

There are inter-sectoral conflicts on uses of water like it is for irrigation and drinking or industry or agriculture or domestic use. Since most urban centres depend on river flows, it is leading to conflicts as one can see between Delhi and Haryana; those between the drinking water needs of Chennai and irrigation compulsions of farmers of Andhra Pradesh; and those between Ahmadabad citizens' drinking water needs and farmers on the banks of upstream Sabarmati River.[31]

This leads to intra-sectoral conflict on the basis of conflicting interests between the rich and powerful on the one hand and the poor and the marginal, on the other. The domestic uses include the conflict between the poor rural peasants requiring a pot full of drinking water and the rich urban elite using large quantities of water for meeting the requirements of water-intensive sewage system, cooling, gardening, etc. Conflicts can also arise between the State and the people when government policies lead to changes in water use and utilisation pattern and therefore undermine peoples' access to water.[32]

State intervention in the groundwater sector led to the concentration decision on use of water in the hands of the rich thus generating new conflicts between rich and the poor. This has led to a gross over-exploitation of water resources. The problem is compounded by the lack of any effective institutional check on the volume of water. In the words of Garett Hardin, "uncontrolled access to a common natural resource (in this case ground water) leads inexorably to its degradation and thus it becomes the tragedy of the commons."[33] The tragedy in the management of commons like water resource is the prevalence of a kind of coercion to make individuals act in their common interest; rational self-interested individuals will not act to achieve their common or group interest. In other words, even if all of the individuals in a large group are rational and self-interested, and would gain if, as a group, they acted to achieve their common interest or objective, they will still not voluntarily act to achieve that common or group interest.

1.3.2 Conflict due to survival needs vis-à-vis the market

In the colonial period in India, the role of water as means of survival and ecology was transformed into a source of revenue and as input to commodity production for the generation of profits.[34] The introduction of market forces in water resources of the country created new conflicts between the market forces and survival compulsions. The large scale diversion of water resources from survival needs to the demands of the market generated conflicts between commercial interests for production of profits and people's survival.[35] This has a very disturbing impact so far as the poor people's access to water resources is concerned. The poor and marginalised groups suffered because the base for their survival needs eroded with the intervention of market forces. The lack of income and purchasing power prevents them from entering into the market.[36] Thus, conflicts over natural resources can therefore be seen as conflicts over rights.[37] The present model of development made people to take a mechanistic view that natural resources are also a commodity. Forests, lakes and oceans are seen not as sources of survival of a community but the means to maximise profits for a few.[38]

An Organisation of Economic Co-operation and Development (OECD) report identifies three methods of settlement of water-related conflicts: (i) a legal settlement, which lays down constraints that are clear in principle, but often difficult to apply in practice; (ii) an economic settlement, which seeks the optimum compromise under the laws of water supply and demand (in both quantity and quality); and (iii) a comprehensive settlement, which is more persuasive, but not optimal, and uses joint participation machinery in programming for achieving joint objectives.[39]

1.4 Water: from a common property to a private commodity

There is a major shift in the way CPR is perceived in the contemporary development discourse. At a political level, development involves privatisation of resources.[40] Almost all development projects have private participation as pre-requisites at different stages. This transformation of commons into commodities deprives the politically weaker groups of their right to survival, which they had through access to commons. This development model also seriously undermines the

self-renewable capacity and the sustainability of the resource, by eliminating the social constraints on resource use that are the basis of common property management.

In India and other developing countries, the transformation of CPR to commodities has largely been mediated by the State and its institutions.[41] Especially in India, the State (colonial and post-colonial) is held responsible for the destruction of CPR through commercial over-exploitation and the erosion of community systems.[42] In the pre-colonial period, the general rule was that the rights over water were vested in the community rather than the individual. The practice was dynamic and subject to change with the change in local situations. Thus, rights were established through practices and customs than by title deeds that could be bought and sold in the market.[43] However, this practice was dismantled and the right to property emerged during the colonial period in India, ignoring the pre-existing community rights in water.[44] There was a complete departure from the system that existed in the pre-colonial period when laws and regulations treated water as a common property resource.[45]

During the colonial period, CPR was converted into State property, weakening the authority of the communities, thereby transforming the commons into free access resources and placed the water systems in the hands of a centralised bureaucracy with modern engineering knowledge.[46] In this context, there are two colonial legislations which need to be mentioned – first, the Indian Easements Act of 1882 and the Indian Forest Act of 1894. The former legislation stated that, a land owner has the right to appropriate water which is below the land and no action will be taken against the owner even if the owner intercepts and diverts water which remains under the land of another. This was followed by the Act of 1894 which gave the State the right to acquire forest lands and along with it the water resources beneath it. It systematically transformed the way natural resources are managed and maintained and in the process these resources ended up becoming commodity generating revenue and profits.[47] The situation worsened in the post-independent India with the political leadership and the bureaucracy retaining much of the colonial mindset.[48] Consequently, the most seriously affected people of such a transformation are the indigenous communities and according to Shiva the "politically weak and socially disorganised groups"[49], who primarily depend upon the natural resources for their livelihood.

The development activity initiated by the State does not necessarily focus on the collective public interest. It often becomes a powerful instrument of privatisation of resources. The transformation of CPR into private property rights simultaneously implies the exclusion of the right to survival for the poor and marginalised sections of the society. The role of international developmental and aid agencies in this regard is notable. The idea of aid and technology transfer in the name of development is central to the diversion of natural resources from survival needs to the market forces. While it serves the purpose of privatisation of CPR, in the long run it contributes to the globalisation of control over local resources.[50] Thus local resources increasingly move out of control of local communities into the hands of state or national governments and sometimes the national government into the hands of international agencies.

1.5 Water in the international political-economic discourse

Water became a prominent issue during the 1970's in the international political-economic discourse. The 1972 United Nations conference on the Human Environment, held in Stockholm, identified water as one of the natural resources that has to be safeguarded. Subsequently in 1977, the United Nations held the Mar del Plata Water Conference in Argentina which was devoted exclusively to discuss the emerging water resources problem. The Mar del Plata Action Plan was issued, which was designed to address those problems. Among the important issues raised, the Action Plan advocated the effective legislation by nation states to promote efficiency and equitable use in the protection of water and water-related ecosystems. It also stated, to promote efficiency and equitable use of water, pricing and other economic incentives should be used.[51] However, by the late 1980s, the World Bank and other multilateral and bilateral institutions discovered the virtues of *privatisation* in the provisioning of public services such as water and with privatisation all of the attendant problems of setting tariffs and prices.

Such an approach towards water was echoed in the UN setting for the first time in 1992 at the Dublin Water Principles which claimed "water as an economic good." This radical consensus emerged for managing water resources for delivering water supply on an efficient, equitable and sustainable basis. Thus, the guiding

principle that emerged from the 1992 Dublin conference is that water has an economic value in all its competing uses and should be recognised as an economic good.[52]

1.6 Debates on right to water

The debate on the *Right to Water* is traced to the Mar del Plata Water Conference 1977. Resolution II on Community water supply declared for the first time that, "all peoples, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantities and of a quality equal to their basic needs."[53] This was further elaborated and discussed by the Committee on Economic, Social and Cultural Rights which issued the notable General Comment No 15 at its 29th session held in Geneva in November 2002 dealing with the right to water. General Comment No 15 of the Committee states that "the human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses." The Committee laid down three basic factors applicable in all circumstances to fulfil the right to water. They are availability, quality and accessibility. The Committee set standards for each of these factors. Availability refers to the idea that the water supply for each person must be sufficient and continuous for personal and domestic uses.

The second factor, quality, refers to the idea that the water required for each person's for domestic uses must be safe and free from substances that constitute a threat to a person's health. Lastly, accessibility refers to four things namely, physical accessibility, economic accessibility, non-discrimination and information accessibility. The Committee called upon the State parties to adopt effective measures to realise, without discrimination, the right to water as enunciated in the General Comment.[54] Thus, the Committee through its General Comment No 15 has provided a solid basis for recognising a human right to water.

The General Comment presents three obligations on the part of the State parties, which are *respect*, *protect* and *fulfil*. In this context, *respect* refers to the obligation where State parties refrain from interfering directly or indirectly with the

enjoyment of the right to water. It requires that the State parties must not engage in any practice that denies or limits the equal access to adequate water, arbitrarily disturbs the established management and water allocation practices, water services or infrastructures and pollutes water.[55] *Protect*, on the other hand, requires the State parties to prevent third parties from interfering in any way with the enjoyment of the right to water. The obligation thus, includes adopting necessary and effective legislative and other measures to restrain third parties from denying equal access to adequate water. *Protection* also requires prevention of third parties indulging in illegal activities which denies equal, affordable and physical access to sufficient and safe water.[56] The last type of obligation is to *fulfil*, which refers to facilitate, promote and provide. It requires the State parties to take positive measures so that community members enjoy the right to water, there is appropriate education concerning the hygienic use of water, protection of water sources and methods to minimise water wastage. It also requires the State parties to adopt such necessary measures to full realisation of the right to water like, recognition of right to water within the national, political and legal system, adopting a national water strategy and ensuring water affordability to all.[57]

On the other hand, right to water also contains both 'freedoms and entitlements'.[58] While freedoms include, the right to maintain access to existing water supplies necessary for the right to water, entitlements include the right to a system of water supply and management that provides equality of opportunity for the people to enjoy the right to water.[59]

1.6.1 Water: right versus need

The current debates on water are guided by two opposing views. One is that water is an economic good that should be priced and would best be managed through markets or at least through market-based mechanisms, such as user fees and charges. The other view is that access to water is a human right. Thus, in the recent times, there has emerged a debate about how to treat water as a basic right or a basic need. The first world water forum in Marrakech, Morocco (1997) Declaration fell short of regarding drinking water as a right as it happened in the Mar del Plata, Dublin or the Rio conference on water. It merely recommended, "Action to recognise the basic

human needs to have access to clean water ....” Similar statements were included in the Ministerial Declaration of The Hague, which called for the recognition that, “access to safe and sufficient water and sanitation are basic human needs.”[60] The difficulty in declaring water as a basic human need or a human right was further highlighted by the General Assembly on the United Nations.

In 1999, the General Assembly issued the resolution of the right to development and in its realisation it reaffirmed, “the rights to food and clean water are fundamental rights and their promotion constitutes a moral imperative both for national governments and for the international community.” All the conferences and forums that were held during the 1980s and 1990s issued declarations, resolutions and detailed action plans aimed at addressing the water problem. However, the resolutions, declarations and action plans are statements of policy that do not possess formal legal enforceability. Since they are not subject to signing and ratification, they do not create binding effects (though they may provide the impetus for later binding instruments and further the definition of policy and principle in a given area).[61] The resolutions emanating from the various water conferences and forums could not clearly define the issue of access to water as a basic need or as a basic right.[62] Except the United Nations General Assembly (UNGA) resolution on the right to development, other declarations and resolutions fell short of declaring safe drinking water as a basic human right. The difference between declaring water as a basic need and as a basic right gives two different approaches to look into water issue. A *right* conveys a sense of legal entitlement and if drinking water is declared a basic right, then the State is duty bound to protect and provide all its members. On the other hand, a basic *need* represents the recipients as passive beneficiaries.[63] In this sense, it is not the sole responsibility of the State to protect and safeguard water for all its members; rather they themselves have to arrange for it.

1.7 Water and the United Nations millennium development goals (MDGs)

In September 2000, building upon a decade of major United Nations conferences and summits, world leaders came together at United Nations

Headquarters in New York to adopt the United Nations Millennium Declaration, committing their nations to a new global partnership to reduce extreme poverty and setting out a series of time-bound targets – with a deadline of 2015 – that have become known as the Millennium Development Goals[64] (MDGs). The MDGs have become the guiding principles for the international development community. In the MDG, there are eight goals and 18 targets on which the signatory countries are supposed to act. Of a total of eight goals, one of the goals (goal-7) is to ensure environmental sustainability. Under this goal, target 10 states, "halve by 2015 the proportion of people without sustainable access to safe drinking water." This makes the signatory States to act upon providing safe drinking water to their citizens and make necessary policies and programmes towards achieving that target. This was echoed in the National Water Policy (2002) in India which gave highest priority to provisioning of safe drinking water to the people. Thus, MDGs entered into the arena of country's public policy through a rights perspective.

Further in 2000 The United Nations committee adopted a resolution on right to health which includes access to safe drinking water and adequate sanitation. According to Bharati, ensuring access to sufficient and safe water is part of the fulfilment of basic human right and entails the following[65]:

- Water as a Right: Fresh water is a legal entitlement, rather than a commodity or service provided on a charitable basis.
- Accessibility: everyone must have safe and easy access to clean drinking water.
- Attention to lower socio-economic classes: The *least served* should be better targeted and therefore inequalities decreased.
- Affordability: for one and all.
- Empowerment: Communities and vulnerable groups should be empowered to take part in decision making.
- Making adequate quantity available: Adequate amount of water available at individual level increases the macro-income level & has its spill-over effects too.

1.8 The Indian context

On the eve of independence, in his speech to the Constituent Assembly on August 14, 1947, Jawaharlal Nehru, while reminding the country that independence from British rule is but only a step, observed that much remains to be done. The task ahead included among other things, in his words, has to be focussed on the ending of poverty and inequality of opportunity. His basic thrust was to overcome the inequality[66] of access. However, despite his commitment as reflected in the policies pursued by his government and the successive governments, the promise remained unfulfilled which he placed in the pegging order.[67] The unevenness in development is reflected in the widespread inequalities found in the economic, social and political spheres. It is now widely believed and viewed that there exist two India's[68] – one that has all luxuries of the first world and has the privilege of access to everything from influencing State authorities for their own needs. It is no exaggeration to say that the other India lives in abject poverty, having very limited access to or, more often, no access over the basic necessities of life.[69] This segment includes large sections of the rural and urban poor. They have a formal status as citizens and who can exercise only their franchise as an instrument of political bargaining once in five years. They have no other organic relationship to organs of the State. Most governmental agencies do not treat them as citizens unlike their counterparts who fall in the middle and upper rungs of society. They make their claims on government, and in turn are governed, not within the framework of stable constitutionally defined rights and laws, but rather through temporary, contextual and unstable arrangements arrived at through direct political negotiations.[70]

Therefore, the ambitious goals that Nehru had placed before the countrymen continue to remain largely unaccomplished.[71] The unexpected political culture in India in the form of apathetic citizens, inactive civil society and a bureaucracy-centred administration is as well responsible as the dishonest political class for the mess up. Consequently there is still large scale poverty, illiteracy and level of deprivation often shrinking. Groups of population are deprived of their basic necessities and honourable living conditions and in some areas they constitute the majority. This provoked Sen to identify in his pioneering work, *Development as Freedom*, to say that part of the

world, "live in unprecedented opulence, yet we also live in a world with remarkable deprivation, destitution and oppression."[72]

The XI Five Year Plan (FYP) declares that the so-called rapid economic growth of the country "failed to be sufficiently inclusive."[73] Further it states "the poor do not have even minimum access and a select few have relatively better access to urban services."[74] Thus this assertion by the apex policy planning body of the Indian State articulates loudly its failure to be inclusive. However with each successive government and the change of political party in power, there is a new group of intellectuals put in place for the apex planning body, the Planning Commission of India. Their primary task is to find out lacunas in the previous plan document, criticise the previous government and then put their own ideas in the new plan. But at the end the same group of planners end up doing the same as their predecessors did. Successively this is the practice noticeable in the five year plan documents.

While it is always the endeavour of a democratic government to ensure that the policies pursued (both economic and social) lead to accelerated improvement of welfare of the common people[75], the Indian State appears to be exhibiting tendencies which contradicts it. This has been proved by some independent studies in divergent areas of State interventions in India.[76] While in the short run, provisioning of the basic services such as health, education, clean drinking water, etc. impacts directly on welfare of the common people, in the long run, it determines their economic opportunities for the future.[77] Thus, without access to these services or having limited access, equality of opportunity cannot be ensured.

1.9 Access to drinking water in urban areas: country level projections

Access to drinking water in India remained a challenge even after six decades of planning and development and despite massive outlays for drinking water. Available data indicates that in the urban areas, around 70 per cent of households are reported to have access to tap water and 21 per cent through tube well/hand pump. Further 66 per cent urban households seem to be having their principal source within their premises, while 32 per cent had it within 0.2 km. On the other hand, in rural

areas around 50 per cent of households were served by a tube well/hand pump, 26 per cent by a well, and only 19 per cent by a tap. Only about 31 per cent of rural households have own source of water within their premises, the rest had to go out to fetch their drinking water.[78] Some of the main challenges the country is facing for the provisioning of drinking water are the following: population in the rural areas do not have assured sources of drinking water; there is urban deprivation among the urban population; the problem of water pollution and contamination are rampant; the problem of fluorosis; high level of salinity in water. Apart from this one more challenge in the form of private provisioning of drinking water is becoming the readily accepted answer to the Indian policy makers for failure of State provisioning of drinking water. Even though there are several sources of water like rainwater, rivers, springs, wells, ponds, tanks, and lakes, due to rapid industrialization and urbanization they are getting polluted and many are rapidly drying up. This has led to the scarcity of potable drinking water and has resulted in the commoditisation of water and is being treated as an *economic good* or *cashable resource*. This in turn has led to the intense privatization of water resources at the cost of disenfranchisement of local communities, indigenous people and the farmers.[79]

Consequently, drinking water has become a politically contentious issue. This is so because it has become a major problem for the common man and the political leaders across their political affiliations try to attract attention by raising the issue of drinking water. The issue of drinking water evokes strong response in the electoral political discourse of the country where election promises have drinking water as the top priority.[80]

Simultaneously, there has been an enormous increase in the plan outlay for this sector. The first five year plan allocated Rs. 43.00 crores which rose to Rs. 18624.00 crores in the ninth five year plan. Apart from this steady increase in the plan outlays, there are also several policies drafted at the national level to facilitate the State provisioning of drinking water. Besides several central interventions, there are programmes for augmenting drinking water supply. For example, the Technology Mission in 1986 and the National Water Policy 1987 led to the introduction of Sectoral Reforms for water in 2002, and a redrafted National Water Policy evolved in 2002. These major policy initiatives on water appeared to have boosted effort at

prioritising drinking water availability. However, water accessibility remains a challenge to policy planners. There appears to be a mismatch between State policies, plan outlays and people's access to potable drinking water. This projects a serious governance deficit in this vital sector.

1.10 The Politics of access to water in India

The dynamics of politics in provisioning safe drinking water to all in India calls for an analysis. The first is the contradictions in policy and implementation. In the post-independence period, the top brass of Indian leaders were pre-occupied with the zeal and enthusiasm to see the people emerge from a deprived colonial life. Therefore, when the debates on planning and development of the country came before them, an important objective of Indian planning they perceived was to achieve economic development with equity and social justice. However, as discussed earlier and argued by Sen, these policies were less inclusive and at times could not include the lower strata of the population in the planning process.[81] In the stage of policy formulation and conceptualisation, the role of stakeholders and the community members who are directly affected are ignored.

At one point, while seeking election to the legislatures, the leaders promise a host of facilities such as clean drinking water among others; once they are elected, their promises gets diluted in terms of priorities. Therefore as Kohli argued, access to State power in India is bitterly contested not only for the political ends of exercising power and influencing policy but also as a source of livelihood and rapid upward mobility.[82] Thus, elections are fought more to assert their (the leaders) position in society and fulfilling the promises made during elections gets lower priority.

Second, in terms of resource allocation particularly to urban drinking water sector, over the years it increased phenomenally[83] (though it is a meagre amount as compared to the total expenditure of the government and compared to spending in other sectors). However, the problem remains the same and times have increased in several areas. Considerable size of city population is not covered by the supply networks in cities and water supply is getting restricted. Therefore, collection of water, for many, is a stressful activity that encroaches on their time and space and thus gives rise to water

related tensions that were absent in the past.[84] The public taps are sites where long queues are seen and sometimes involve bitter conflict for water. This is contrary to the government's claim that all the people are provided with drinking water facilities.

On the other hand, when it comes to public spending, basic pro-poor services especially those that serve rural poor are often at the bottom of the list, after services that meet the needs of the more effectively organised groups such as the urban centres.[85] However, in the urban areas also there is a lot of disparity in water distribution and the consequent access to water by the people. Areas in the cities where the wealthy and influential reside have easy access to water whereas those in the poorer areas tend to fight for it. Therefore, in heterogeneous user groups the resource is vulnerable to elite capture.[86]

One of the major areas of concern is how the idea of *coverage* and *access* is conceived in the planning process. While planning for provisioning of drinking water, government agencies in India stress more on the coverage side, asking questions like, what is the percentage of people covered with drinking water facilities, which areas in the city are covered with supply of drinking water, etc.? However, the basic problem with such kind of approach towards providing safe drinking water is, it conceals the actual access to drinking water by the people. For example, in an area not covered with the piped supply of drinking water, generally the city level authorities install a public stand post (PSP) or a borewell or supply through tankers. However, this arrangement does not guarantee actual access to water.

There are several factors such as the population in the area and the number of people dependent on a particular water source and the distance of the water source from the place of residence; each of these plays an important role in the people's access to drinking water. It is important to note however, that in an area where a hand-pump or a stand-post has been installed, the area is termed as covered with safe drinking water facility by the city level authorities. But nobody checks whether the installed facility is functioning or not, whether people in the area are utilizing water from that facility or the water quality is consumable at all. It must not be forgotton that physical coverage does not necessarily ensure functional coverage and access to water for the people.

Major river systems are supposedly intended to augment the availability of water. However, the runoff water of these rivers, it appears, is far greater than the tapped water. There appears to be policy gaps in this sector a situation in which we are unable to ensure water for the people in drought prone area while a large amount of water is wasted. The problem is further compounded by the misguided priorities. Many of the Indian cities are located on the banks of major rivers or large water tanks. As fallout of the rapid and unregulated urbanisation in these cities, the catchment areas of these water bodies are occupied by the land mafias and real estate developers while the government remains a mute spectator. Over time, with increase in the population of the city, the demand for water increases and in order to meet the increased demand the government searches for water sources in distant rivers and dams having destroyed the in house source. Such projects need huge investments which the government is unable to meet. Consequently, the government approaches the multilateral and bilateral donor agencies for funds which come with pre-conditions such as increase in water tariffs, private sector participation and privatisation. Thus, the failure of government to prioritise policy and inability to regulate the pace of urbanisation has led to deeper crisis and finally the burden is on the common people.

In a broader understanding however, the politics of access to drinking water in India relates to the State-market-community dichotomy and the role played by each of them. According to Mosse, there are two major political and policy positions currently shape questions around water resources and their development in India. The first is an environmentalist critique of the modernising development strategies of the centralised State and second is a reformist policy for the devolution from State to the communities of users and a reduced role for the State.[87] Though Mosse talked about in the irrigation sector the issues are identical in the area of drinking water provisioning.

1.10.1 Lack of access to democratic institutions leads to lack of access to natural resources

In the pre-colonial and colonial period in India, domination and access to resources rested on a hegemonic caste-based ideology. This form of control was

increasingly challenged in the post independent India as new assertions of equality were legitimised within a democratic polity.[88] There has been a historic shift in the mode of domination and access to resources. The post-independent Indian State made special provisions for the socially weaker and deprived sections to assert their identity and access to resources through institutions. Constitutional provisions for equality and justice were made simultaneously creating several institutions to implement it, suddenly the deprived sections found themselves within the reach of institutions and thus access to resources. Therefore, access to the modern democratic institutions has furthered the cause for access to natural resources such as water which in the pre-colonial and colonial period was limited to the upper strata of the society. The influence of different groups and their political coalitions shifted considerably over time in the post-independence period and these changes influenced the allocation of public resources. Benefits of the expansion in public goods such as water were unevenly distributed among the disadvantaged groups corresponding to their influence in the system.

Within the deprived categories, one notices unequal access to benefits and resources. According to Banerjee and Somanathan there are important realignments in the influence of minority groups. Areas where Scheduled Castes (SCs) concentrations are more gained in terms of access to several facilities such as high schools, health centres and piped water, while those with Scheduled Tribes (STs) and Muslims remain disadvantaged in India. The increased assertiveness and political representation of the SCs have made their position stronger and access to resources easier.[89] In contrast, the Scheduled Tribes remained, until the mid-1990s, largely invisible on the political landscape in India.

1.10.2 Lack of access and inequality in access; a result of crisis in governance

Governability in the contemporary discourse concerns with the State's capacity to accommodate diverse interests and promote development.[90] In contrast, the Indian State in many respects has limited success or has failed to do so. As it would be seen in the chapters that follow, there is enormous amount of inequality that exists in terms of access to resources and State provisioning of services. According to Kohli, crisis of governability refers to three types of problems: the absence of long-

term coalitions, policy ineffectiveness and incapacity to accommodate diverse political demands without violence. He further clarifies the matter stating that political parties in India rule without stable social support and as a result, the government is unable to accommodate demands from diverse social groups.

Consequently, in a democratic polity like India, political goals are increasingly pursued by violent means. These signs according to Kohli are the growing problems of governability.[91] These features in Indian context are increasingly evident in the recent times. There is deprivation in terms of access to resources while certain sections have easy and greater access, whereas others do not have even the basic minimum.[92] These can be further seen in the eleventh five year plan which states that the people residing in the poorer areas in cities do not even have minimum access to clean drinking water.[93] Thus, lack of access and inequality in access stems from crisis of governance.

Lack of effective monitoring, ineffective rules and regulations and application of sanctions differently to different people those who violate government regulations and the bureaucratic nature of the system with rent-seeking behaviour on the part of officials had led to preferential treatment for those who can influence. The general distrust on the bureaucratic system resulting from such a situation makes cooperation in the management of State controlled resources less likely.[94]

1.11 Crisis of governability and failure of State

Kohli in his pioneering work *Democracy and Discontents* argues "a crisis of governability is growing in India."[95] The contention here is that, successive governments in India which have been elected with large majorities which repeatedly failed to translate popular support and expectation into effective policies, and simultaneously the role of violence has been growing enormously. What makes this even more interesting is that the roots of the growing crisis of governability are more political rather than socio-economic. The factors are mainly located in India's political structure. The intense political competition and the opportunities provided by a highly interventionist state helped many groups to mobilise and intensify their demands and activity. Consequently, there is growing uneasiness and difficulty

among the political parties to accommodate diverse demands and rule effectively.[96] The growing incapacity of the State in India to accommodate the diverse demands is sometimes perceived as a manifestation of a crisis of governability.

The inefficiencies and inequities in access to water and water supply system primarily from top-down management by the State bureaucrats. While a study on cooperatives in rural India by Baviskar and Attwood[97] reveals the above facts, the story of drinking water provisioning is nothing different.[98] This approach of top-down management, planning and regulation by the technocrats and replicating certain successful cases in one location to others ignoring the local conditions has severally compromised the successful implementation of different programmes and policies.[99] In recent years, there has been a growing trend of major central government policy initiatives getting floundered and their support base declining sharply, further contributing to the cause of crisis in governance. As the issue of competing demands increases, the authority and support base of the leaders are fiercely challenged. Consequently, there is an increase in populism and establishing personal charisma ignoring the rules and institutions.[100]

This process of establishing personal authority has undermined the possibility of establishing a system of authority based on the procedural rationality of democracy.[101] The emphasis is not on impersonal procedures of accountability, more on politically legitimised ways of manipulating the network of patronage distribution. In addition, the economic scarcities and heterogeneous social structures in India have contributed to the weakening of political organisations and other democratic institutions.[102] These institutions are crucial as they contribute to our freedoms[103] and our "opportunities and prospects depend on what institutions exist and how they function."[104] However, the weak political institutions have encouraged unhealthy political competition, which has politicised all types of social divisions such as caste, class and ethnicity. Thus, the deinstitutionalisation of the Indian State has diminished the State's capacity to make policy and manage conflict – that is, to govern wisely and well.[105] The problem has further been compounded with no new institutional mechanisms emerging to meet the fast-changing politico-socio-economic contexts in India. Therefore, the emerging crisis out of such circumstances has increased the

problems of governability in India and thus failure of the State to meet the demands and expectations of its associates – the citizens.

1.12 Approach towards water in the post-reform period

The post-independence Indian State was at the centre of planning and development. The State was omnipresent in every sphere of the economy. During this period interventionist policies were highly successful across the world, firmly establishing the State as an important and often the leading actor in the functioning of the economy.[106] However, towards the seventies, the state-centric model of development started to falter. What followed was a virulent attack on the State both at the theoretical and at the practical levels. This culminated in the dismantling of socialist central planning in 1989 and the attempt to establish capitalism in Eastern Europe and the erstwhile USSR. Although the rolling back of the State has not proved to be straightforward as many anti-interventionists had initially thought, this reversal of trend has had a significant impact on the theory and practice of State intervention.[107] Thus, in India and in other developing countries, there have been many radical neoliberal reforms since the 1980s. These reforms were implemented sometimes voluntarily but often under pressure from multilateral agencies such as the IMF, the World Bank, and the WTO and other donor governments under the aegis of governance conditionalities.[108]

In the post-reform period, the way people perceive things have changed drastically and it was never a spontaneous process. Rather it was, in the words of Chomsky, "manufactured consent" by a select group in order to perpetuate their own selfish interests. This group as one can call them neo-liberals subscribe to the new political economy or the government failure approach, which rejects the welfare economic view of the State as a benign and omnipotent social guardian which maximises social welfare. They argue that the State should be seen as an agent which serves the interests of the politically influential groups inside and outside the State apparatus (politicians, bureaucrats, interests groups), which means that State intervention is likely to create inefficiencies, red-tapism and rent-seeking rather than correct for market failures.[109]

Thus, the neo-liberals started to see an opportunity for a large potential market in India which remains to be exploited. Following the adoption of reforms, in India the early 1990's saw a significant liberalisation of the economy, as the earlier ideas of planning and State ownership came under intense domestic criticisms on grounds of being ineffective and corruption ridden. This also meant that, among other sector water sector also came under such liberal policies. Since the Dublin Declaration of 1992, water is increasingly seen as having economic value in all its competing uses and water as an economic good. With this, there was a major shift in the planning for water in India and for the first time in the eighth five year plan water was declared "to be managed as any other commodity." This also advocated for private sector participation in the management and provisioning of drinking water to the people. The price signal is thus evoked as a way to solve water scarcity problems and due to liberalisation, there has been a push to recover costs in the water sector, especially for service delivery. Thus, water in the post-reform period has moved from being viewed as a public good to a private commodity. This change is partly due to the growing influence of powerful players such as the World Bank and transnational corporations that are paving the way for the privatisation of water services. Hence there is an unresolved struggle between efforts aimed at making water more private, in the interest of efficiency[110] and making water public in the interest of equity.[111] The struggle persists because of reluctance among powerful players to acknowledge water as a basic right and not just as a basic need. The next section takes a look at some of the significant works in the area.

1.13 Review of literature

Issues in water led to intense debate and research in the present context. The literature falling in the domain of water resource is too vast in terms of depth and richness. However, within the broad policy framework there are certain aspects where the literature is very old and rich like irrigation, basin management and regional development. Contrary to it, there are issues such as water supply and health, environmental implications and ecology, where literature is relatively young and fast growing. Further, as the research on water gets more intense there are several other issues like, water markets, private sector participation, health, gender, empowerment

and climate change, the literature on which are mostly of recent origin but are growing very fast. In addition, there are other areas of research in water sector such as recycling and reuse of water, seawater desalination and watershed development. However, the scope of the present research is limited to safe drinking water and its provisioning in the urban areas in India. Hence, the literature reviewed is confined to the issues around provisioning of safe drinking water.

1.13.1 Culture, civilisations and water

Since time immemorial, water has been associated with different cultures and civilisations were built along rivers and water bodies. In a micro setting, water enters the intimacies of domestic spaces (Mehta and Punja: 2007) and shapes relations between villagers of different castes and gender (Brara: 2007, Carney: 2007) while creating collaboration as well as conflicts (Baviskar: 2007). Yet control over water leads to control over people. It has been seen historically that struggles over water are simultaneously struggles for power over symbolic representations and material resources (Baviskar: 2007).

1.13.2 Water as a promoter of socio-economic development

Water supply is a necessary part of the infrastructure required for the fulfillment of socio-economic development. Access to safe drinking water is regarded as essential both as a direct component of well-being as well as an input into productive capability (Besley and Ghatak: 2004). The consumption of at least eight glasses of water per day is recommended by physicians for maintaining balance in fluids vital for the system to survive and prevent dehydration. Drinking safe water is essential to prevent fluorosis and other diseases, which eventually lead to decline in productivity. Therefore, securing access to safe drinking water is an essential component of overall human well-being. But, the water supply system in many developing countries including India is affected by two major problems. First, new consumers are connected to the existing supply system placing more strain on the already installed capacities and thereby rendering the system less efficient. Secondly, transmission loss owing to poor management, lots of water is lost before reaching the households (John: 1997). Water crisis is generally seen in terms of an increasing

imbalance between water supply and demand. Demand management is important especially in the context of scarce resources, as the supplies are limited. Demand management brings efficiency through pricing of water when compared to supply regulations like increasing the amount of supply (Reddy: 2003). Thus, it is argued that the emphasis of treating water as a free good and bureaucratic allocation and management are inconsistent with the present requirement and challenges (Saleth: 2002). Therefore managing water is going to be a critical challenge for future economic growth and ecological sustainability (Baviskar: 2007).

1.13.3 Growing demand for water

Rapid urbanisation, industrialisation and population growth have greatly increased the demand for safe drinking water in the urban areas (Lee: 2002). The close relationship between the pace of urbanisation and the availability and accessibility of safe drinking water to the urban people has commonly been accepted (Rao: 1985, Barai: 1993, Kundu: 1993, Sivaramkrishnan: 1998, Nunan & Satterthwaite: 2000, Reddy & Behera: 2003, Llorente & Zerah: 2003, Sivaramkrishnan, Kundu & Singh: 2005). Adequate provisioning of drinking water supply to all in urban areas remains a formidable challenge (Ruet, Sarvanan & Zerah: 2002) and water services tend to be provided to those sectors of population with developed country incomes (Lee 2002). Thus, the distribution of water resources is associated with political power and according to the power structure of the different groups within the local community water is distributed (Gilmartin: 1994, Mosse: 2007). Mosse (1997) argues that patterns of water control and distribution inherently involves caste relationships and caste identity is inseparable in such matters. He further argues, systems of water use tend to reflect authority structures, with lower castes and women being excluded from the exercise of controlling power.

1.13.4 Water as a fundamental right

On the other hand, safe drinking water is considered as a fundamental human right of all human beings putting emphasis on the State obligations to protect and fulfil this right (Iyer: 2003, Ramachandraiah: 2004). In December 2000 the Supreme Court of India gave a landmark judgment that, drinking water is a fundamental right

under the right to life (Article-21) of the Indian Constitution. On the other hand, in the international political-economic discourse drinking water is perceived to have human rights implications in order to meet the basic requirements and to attain equity in access and to empower vulnerable groups. In this context, demand for water assumes an ethical and social dimension (Saleth: 2002).

Another major issue is the rights over water or the ownership of the water. Who exactly owns water resources? In the ancient days, due to the uniqueness of water to life, water was considered as a *social asset* (John: 1997, Petrella: 2001, Shiva: 2002). It is further argued that, the original natural rights over water belong to the people and not to the government or the State (Singh: 1992). Further, going a step forward, Vandana Shiva (2002) argued that water is a natural right to any human being, which can be used but not owned. Furthermore, the laws in India recognize only the use rights and not ownership or proprietary rights over flowing water (Milliman: 2002, Iyer: 2003). But in the case of ground water, the ownership of land simultaneously carries the ownership of water (Singh: 1992).

1.13.5 Water and shift in development model: Implications

With a paradigm shift in the Indian economy from a state-centric model of development to the free market economy and the process of globalisation, the control of resources has shifted from local communities into the hands of private sectors and slowly to the transnational global operators and multi-national companies (Prasad & Ramachandaiah: 1999, Shiva: 2002). The neo-liberal prescriptions about water management have not only encouraged privatisation, they have also refashioned the State into the image of a corporation (Baviskar: 2007). There is huge market operating for bottled water business in the name of free market economy. They are being promoted as means of increasing economic efficiency in the use of water (Frederiksen: 2002). There appears to be a sort of imperialism against water, where the transnational corporations are making water as their private ownership (Alam: 2004).

A consensus has slowly been built that there is water scarcity and in the interest of water use and efficiency, water needs to be both priced and traded (Lee:

1999, Prasad & Ramachandaiah: 1999, Rogersa, DeSilva and Bhatia: 2002). The rationale behind this is, trading in water rights promotes water use efficiency as markets allocate water to the highest paying user (Dinar & Subramanian: 2002). According to Lee (1999) "Nor it is surprising that even today we find it difficult to treat water as a commodity, as an economic good, even when we recognize it as a scarce resource." Thus, the scarcity of water is transformed by the multinational companies and donor agencies into a market opportunity for water corporations (Shiva: 2002).

On the other hand, the management, operations and financing the water supply, which is traditionally seen as a primary responsibility of the government, is termed as the *old view*. And consequently, a *new view* emerged, in the existing armoury of policies for water resource supply based on an efficient, equitable and sustainable basis, where water is primarily treated as having an economic value (Briscoe & Garn: 2002). Thus, in the contemporary policy discourse at the national level in India water is perceived increasingly as another raw material for commodity production in agriculture and industry (Shiva: 1991). One will not miss the trend of governments showing interest in ensuring minimum infrastructure for establishing industries.

1.13.6 Water and market: the emerging scenario

A market-based approach to the management of water resources has serious socio-economic implications. It is biased in favour of the rich and is highly energy, water and other non-reproducible resources intensive, and often does unacceptable violence to the environment (Bhaduri: 2008). The prime rationale behind the market-based approach is efficiency in water use. But even in achieving efficiency, the market mechanism sometimes may be less than effective, particularly in the presence of what are called public goods (Sen: 1999). Furthermore, such an approach towards an inevitable necessity of life has put a big question mark on the equity and sustainability of it. Issues of equity, social justice and sustainability are not necessarily the concerns of the market (Iyer: 2003).The depletion and deterioration of water resources has taken place with the rise in the power of transnational

corporations depriving the local communities and indigenous people over their share of water (Gleick: 2002). The unmindful implementation of reforms has resulted in increase of destitution and social conflict (Stieglitz: 2002). In the new traditionalist view (Shiva: 1988, Agarwal & Narain: 1997), colonialism, capitalism and the development projects of the post-colonial State destroyed the harmonious social relationships and the practice of ecologically sensitive resource use (Attwood: 2007).

Thus the Indian State, both colonial and post-colonial played an important role in the decline of community management of water through its interventions and assertion of proprietary rights of common resources (CSE: 1985, Agarwal and Narain :1997) which led to the emergence of market. That State control of water resources is not necessarily the best way to guarantee the most efficient use of water appears to be the emerging reality. In fact, the State largely is held as responsible for the tragedy of over-exploitation of water resources occurring today (Sick: 2007). Water delivery, it is further argued, has led to the inequality in access to safe water which has increased rather than decreased (Roowen: 2002). Thus, access to water is denied to many because of the policies pursued by the State itself (Prasad & Ramachandaiah: 1999). Therefore, in the long run, democracy cannot flourish as long as such exclusionary structures and policies are pursued by the State (Oommen: 2008). On the other hand, the sometimes the State functions outside formal institutions and people are more concerned with how to get their works done. As a result they obey more to the person in authoritative position than the established procedure (Reno: 1995).

1.13.7 Water and community participation

It may be noted that the community-based conservation and co-management regimes are also cited as solutions to the crisis in water management (Sick: 2007). Yet community level participation in water supply and management is often ignored by the international development community (Gleick: 2002) as the requirements of community are not generally taken into reckoning. Studies show projects with strong community input are the most successful in terms of reaching the greatest number of the poor with long term services (McGarry: 1987). Informal associations among the citizens rather than formal have worked successfully in solving their problems. At

times of need they come together and disperse as their problems are addressed. This has significant impact on their access to resources (Krishna: 2002). Therefore there appears to be a consensus on the need for public participation in policy related issues. This is thought of as necessary for efficiency and equity as private ownership and operation appears to be resulting in neglect of social goals (Howe & Dixon: 2002). Further, the politics of water discourse seem to be dominated by thinking of perceived and projected water scarcity. What follows is a discussion of a series of issues pertaining to practical implementation of accepted principles such as how to increase supply, what technology to use and to what extent (Jairath: 2003).

1.13.8 Access to water: inadequacies in governance approach

On the other hand, a study by Basu (1995) reveals how ineffective the urban system is in responding to a crisis which affects the poor and underprivileged. The urban institutions are dominated by the middle classes who lack social consciousness. They neither perceive the interdependence between themselves and the poor slum dwellers, nor fear a threat from below. Hence, they are not concerned about the problems of the urban poor and blame the low-status group for their miserable state. Thus the expanding State services in India still do no reach the poorest segments of urban and rural society.

1.13.9 Water governance: the contemporary approach

The new phenomenon that has emerged in the recent times is water governance to manage water. Due to the abundance in availability of water without any overuse, water was sufficiently available for all. However with the emergence of modern technology and water intensive way of living, water started to become a source of conflict which has been discussed earlier in page 6-8. Thus the management of those conflicts centred round water gave way for a new approach to look into water issue. In the new approach, the primacy of governance is noted. Water governance, thus, has became the new mantra of resolving water related conflicts and issues. The concept of water governance has wider meanings in wider contexts. According to Rogers and Hall (2003), “water governance refers to the range of political, social, economic and administrative systems that are in place to develop and manage water

resources, and the delivery of water services, at different levels of society." Further it refers to efficiency and equity in distribution; delivery process, transparent, accountable, participatory and responsive; empowerment of citizens and delegation of powers to enhance their welfare. There is much stress on water governance in order to bring sustainability in water use. Sustainability in water use can only emerge from the democratic control over water resources. Therefore, water governance is required to make the equitable and sustainable use of the resource.

The above review of literature pertaining to the subject shows the trend and the gaps. There are several studies on water which touched upon several issues relating to water such as causes of growing demand for water, urbanisation and impact on water, right to water, role of water in socio-economic development, pricing of water, role of market in water allocation, role of community in water management and governance approach in water management, to mention a few. However, what is missing in all these studies is a study on access to water. In the current discourse of politics of policy making in drinking water, the dominant model is highly bureaucratic and technocratic in nature which places emphasis over infrastructure building. Studies show that in water management there is a perceptive engineering bias and the economic and managerial aspects only follow. Policy shift towards big projects like river linking are the manifestation of this shift. Consequently, issues of water are seen as techno-bureaucratic exercises and transforms democratic functioning into spatial management of populations. In the literature pertaining to drinking water management, discussion on how and in what way policy is formulated is missing. Further, the generally missing feature in the literature is the aspect of access and thus, the present study tries to make a modest attempt in that regard.

1.14 Policy options and implementation

Access to potable drinking water to all in India is a challenge despite sixty years of planning and development. Most studies show how inequitous access to water availability is. The National Commission on Urbanisation for instance observed how water supply system was unequal, unjust, and highly biased in favour of the rich. It stated how the wealthiest and often the most politically powerful member of the society had access to drinking water.

The country has through its plans and different policies tried to address the issue. The major policy interventions like Technology Mission, National Water Policy 1987 and 2002, and Sectoral Reforms for water 2002 are some policy initiatives at a macro level determining the access and distribution of water over time. However, government data shows the problem remains unattended despite policy pronouncements.

Access to water resources in rural areas is through rivers, lakes, tanks, etc. Although access through these sources was mediated by caste and social power structures, yet basic access to water is through these sources. However, potable rural water supply over a period of time assumed alarming position. The basic source of water for the urban population continues to be tap water and ground water sources processed in various stages. Access to water in the urban areas always encountered problems but now the scale and intensity appears to be a huge challenge.

Notable causes for this state include unplanned industrialization, urbanization, population growth, practices which promoted intensive agriculture through the use of pesticides and insecticides and so on. The impact of lack of adequate water supply often lead to conflicts among the villagers, among urbanites and the State institutions, reduced quality of life due to the ecological hazards and above all availability of water itself. This signifies that the water sector in India do not reflect the true status on the ground.

On the other hand, planning for water resource and its development in India is increasingly viewed as a techno-managerial and bureaucratic exercise. Water governing institutions are often headed by generalist bureaucrats or engineers. In such an arrangement, what follows is planning without social concern and mostly based on demand management such as fixing tariffs, full cost-recovery and so on. Moreover, this approach of water resource management is non-participatory and the role of stake holders and community members are overlooked both in the implementation and decision-making process.

In the post-reform scenario, when the State is slowly abdicating from its welfare role, privatisation is seen as the only answer. When, market is controlling the resources, there is concern for quality, equity and social justice aspect and the sustainability of the resource use.

On the other hand, the role of market in addressing the equity problem in the society is questionable. There appears to be systematic attempt at depriving the common people of access to water and indirect encouragement of market players. Not only public taps at several places are dry there is an attempt to trade in public water supply/distribution. A lot of publicity is given in media to the polluted water supplied by State and big advertisements are issued assuring safe drinking water through markets. The situation is so distressing that a photo published in a vernacular daily showed official of the Hyderabad Metropolitan Water Supply and Sewerage Board (HMWS&SB) taking bottled water of a private agency. This only shows why common man should not consume ordinary water supplied by HMWS&SB.

There is also a debate on the scarcity of water. But, the problem is whether it is scarcity that is denying people drinking water or it is the State policies that have deprived the people of drinking water. When the State does not have enough water to provide its people for drinking, simultaneously it is leasing out water bodies like rivers, to the multinational companies to be exploited to their own ends.

1.15 Objectives of the Study

- To understand the changing role of the State in providing drinking water to its citizens in urban areas and the politics of market forces that cause deprivation and inequitable access to drinking water.
- To examine the politics of inter-relations between the State and the market that has led to the marketing of water as a private commodity versus the use of water as a public good.
- To analyse the State policies on water in order to assess whether they resulted in adequate distribution of drinking water.
- To discuss stages of private provisioning of drinking water
- To explore the role of civil society organisations in people's access to drinking water.

1.16 Main arguments

- The policies and programmes adopted by the government failed to provide adequate quantity and quality of drinking water to people in urban areas.
- The exclusion of poor and disadvantaged people from participation in water decision-making resulted in low level of access.
- Marketisation of water has led to inadequate and inequitable access to water for the people.

1.17 Method

To pursue the objectives listed for the study, the researcher put to use both primary and secondary sources for obtaining data. Under primary sources, an attempt was to analyse the government policies, orders and records to understand the functioning and objectives of the institutions created. Further, a survey was conducted in a selected area under the Hyderabad Metropolitan Water Supply & Sewerage Board (HMWS&SB) in Hyderabad.

The choice of Hyderabad for the study was not a random exercise. Intense thought went into the choice of Hyderabad as the study area. The primary issue that struck to the researcher's mind is the institutional arrangements for provisioning drinking water to the people of Hyderabad. Presently a board, the Hyderabad Metropolitan Water Supply and Sewerage Board (HMWS&SB), created by the Andhra Pradesh State Legislative Assembly, is responsible for the planning, implementation and maintenance of drinking water facilities to Hyderabad. The issue assumes importance on the face of a greater demand for decentralisation and people's participation at the city level across the country in accordance with the 74th Constitutional Amendment Act in India. Contrary to it, a parastatal agency such as the HMWS&SB is responsible for drinking water provisioning in Hyderabad which is dominated by engineers and bureaucrats with no public participation.

However, the other major criterion for selecting the city of Hyderabad as a case study was the fact that the city represents the same inherent water governance issues at the city level typical to any other Indian city. There is demand for increase in water tariffs, the challenging issue of ever-increasing population, a high level of

wastage of drinking water while transmission and illegal water supplies, to mention a few. On the other hand, being a land-locked city in the Deccan plateau with arid climate, Hyderabad presents more or less the same problems and issues on drinking water as other Indian cities such as dependence on long distance sources such as Krishna and Godavari rivers for drinking water needs on the face of exhausted reservoirs in the city's vicinity. The researcher's own experience of six years of living in the city of Hyderabad has also played its own part in selecting the city for the present study.

The survey was conducted through an interview schedule (see Annexure - 1) at the household level. The primary objective of the survey was to elicit information from the ground to check the level of user satisfaction, access to drinking water of the residents in the area and the level of service delivery to the citizens in order to ascertain and examine the implementation of different policies and programmes and its impact on the people's access to drinking water. The area selected was Adikmet Sub Zone – 1 of Adikmet Water Supply Zone, (O&M Division no: 5 of HMWS&SB). The area is located in the eastern part of the Hyderabad city and is surrounded by Osmania University in the north and the northeast, Ramanthapur Main road in the south, Shivam main road in the west. The area was selected based on purposive sampling. The problems and issues of water supply in the area are identical to that of other parts in the city. It represents a complex housing pattern consisting of independent houses and slums having individual house service connection, and slum without individual connection.

Adikmet consists of about 5000 odd households which can be divided into independent houses, apartments, slums and makeshift slum dwellings. With regard to water supply, there are two kinds of user households; one, household and slum dwellings with individual house service connection and two, households particularly slum dwellings with no piped water provision. Therefore, the sample for the study consists of households and slum dwellings with individual water connection and households without individual house connection.

The researcher has chosen stratified sampling method. The target groups are divided into three categories, i.e. independent households, slum households with individual water connection and slum dwellings without individual water connection.

The sample for the first two categories is 5 per cent of the total number of households consisting of 250 households chosen for the study. The 250 sample in this category consists of independent flats as well as slum dwellings that have individual water service connection. Once the total number of sample is fixed, it was proportionally divided according to the percentage of each category of habitations. Thus, 136 independent households and 78 slum dwellings are chosen comprising of 64 percent and 36 percent of households respectively with water connection in Adikmet.

On the other hand, there are about 400 houses which do not have individual house service connection, all in the slum dwellings. Initially 5 percent of sample consisting of 20 slum dwellings was taken for this category. However, since most of the people are rag pickers and many of them daily wage labourers, it was difficult to find and interact with them even after repeated visits to the chosen dwellings. Due to their non-availability, the sample size was increased to 10 percent consisting of 40 dwellings for a wider coverage.

Before selecting the exact sample systematic sampling is applied. Listing of all households is done in Adikmet. In the category of houses having piped water connection, after listing of households every 50^{th} household is chosen as the sample. Though the estimated sample is 250, the actual sample is 214. The sample 250 is without replacement sample so there is non-coverage of about 36 houses. This is because the houses were found locked and several visits to the house did not yield any result.

On the other hand, the same procedure was followed in the slum dwellings without individual water connections and every 10^{th} dwelling is chosen as the sample. Though the estimated sample is 40 in this category, the actual sample is 32. It is without replacement sample and there is non-coverage of about 8 dwellings which resulted due to the non-availability of the people even after several visits.

Therefore, the total number of estimated sample for the study is 290. But the actual sample studied is 246.

Besides, there are three Focussed Group Discussions (FGDs) organised with selected respondents in the area to supplement the information and for covering the uncovered aspects. Another aspect of the survey was the discussions and interviews conducted with the HMWS&SB officials, a close observation of their way of

functioning to deliver water to the residents and observation method is used especially at times when water gets released. The secondary includes books, articles in relevant journals, newspaper cuttings and the electronic sources includes internet.

1.18 Organization of the thesis

This study is divided into seven chapters. *Chapter-I,* is an *Introduction* to the study in which theoretical understanding and the background for the present research is figuring. *Chapter-II,* titled *Urbanization and Challenges of Water Provisioning*, deals with the process of urbanisation in India and its impact on water service delivery to the citizens. The chapter also states the present situation of urban water service delivery in India.

Under *Chapter-III, Indian State and Provisioning for Drinking Water*, attempts to deal with the institutional mechanisms put in place, which deal with the provisioning of water supply and distribution. It would also include the State policies for provisioning of drinking water and the changing role that the State plays, in the process of providing adequate drinking water to its citizens. In addition, the chapter also deals with the constitutional as well as the legal provisions that govern people's access to drinking water.

Chapter-IV entitled *Provisioning for Drinking Water- Involvement of Private Sector and Civil Society Organizations: Some Cases,* attempts to analyse in detail the politics of market in issues related to drinking water. How has the market intervened in the process of State provisioning for drinking water to its citizens and the politics of inter-relations between them, and consequently the community access to drinking water is analysed. The agenda of governance reforms, the role of CSOs are also taken up for discussion.

Chapter-V entitled *Provisioning Drinking Water in Hyderabad,* presents a case study of access to drinking water at the city level. When the State, in order to provide drinking water to all in Hyderabad, reorganised water delivery institutions, one curious consequence was that it facilitated the intervention of market in water delivery. It has to be stated that this interrelation between the State and market has different ramifications for different strata of the society. While one section is more

privileged in terms of access to drinking water both through State and market mechanisms, it's a daily struggle for the rest. The civil society organizations in fact are acting as a pressure group on behalf of the common people to facilitate easier access to drinking water.

Chapter-VI, is a discussion of the case study under the title *Provisioning for Drinking Water: A Case Study*. It deals with household survey that was conducted during the study, with reference to supply, availability, adequacy and community access to drinking water.

Chapter-VII, presents as *Summary and Conclusion* of the study and discuss the major findings.

1.19 Limitations of the study

Empirical studies have their own limitations. This study is no exception. The researcher has chosen a manageable sample which is representative in all its forms/categories. However, given the size of the area (55,000 people live in this area) it is difficult for the individual researcher to cover more owing to logistical limitations. There are also people of different temperaments and dealing with each one of them is an arduous job. At times, the survey also involved some argument with the locals as in certain sections they are completely dissatisfied with the water supply. They could not get a chance to redress their grievances hence the researcher was mistaken as an official of the HMWS&SB and have some harrowing experiences.

Issues like water are highly contested. The researcher found it extremely difficult to keep the interviews focussed. Further the researcher could contact limited number of male respondents as a majority leave for work quite early. That is why the researcher has to be content with the dominant representation from women. But it is also a thing of blessing in disguise as women are known for their forthright views and it is they who are at a disadvantage position in the event of either erratic supply or stoppage or other hindrance as far as water is concerned.

Getting access to crucial documents relating to financial position is another limitation of the study. The researcher did not succeed in this regard. As usual, the

officials of the HMWS&SB maintain secrecy in revealing information which makes the progress more difficult.

In addition communicating with the people was particularly difficult due to language barrier. Moreover, some of the respondents were indifferent. Their contention is that whether they give interview or not is not going to change their access to water. So many of them were not interested to speak to the researcher.

This chapter began with a discussion on the centrality of water to human life and the present crisis the world in general and India in particular is facing in terms of managing water resource and meeting the water demands. Subsequently it was seen that there is intense debate on the changing perspectives on water; whether it is a CPR or public good vs. private commodity and right vs. need. It is also seen how the rapid pace of unregulated urbanisation has fuelled the demands for drinking water on the face of ever shrinking water source in India. A good part of the chapter is devoted to review of relevant literature followed by identification of gaps in literature. The chapter, towards the end discussed the outline of the present study. The next chapter deals with the challenges of urbanisation and response of the Indian State in providing drinking water to its citizens.

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[1] Nandita Singh, "Indigenous Water Management Systems: Interpreting Symbolic Dimensions in Common Property Resource Regimes", *Society and Natural Resources,* 2006, p. 364.

[2] Amita Baviskar, (Ed), *Waterscapes:Tthe Cultural Politics of a Natural Resource,* Permanent Black, Ranikhet, Uttaranchal, 2007, p. 1.

[3] Lyla Mehta, "*Problems of Publicness and Access Rights: Perspectives from the Water Domain*", www.menschen-recht-wasser.de, accessed on 02.01.2008.

[4] *India' Water Economy: Bracing for a Turbulent Future,* the World Bank, Washington DC, 2005, p. 4.

[5] Harold Laski, *The Grammar of Politics,* George Allen & Unwin, London, 1939, p. 67.

[6] Aristotle wrote, "Men journey together with a view to gather particular advantage, and by way of providing some particular thing needed for the purposes of life, and similarly the political association seems to have come together originally, and to continue in existence, for the sake of the general advantages it brings." (Ethics, viii.9.1160a) cited in, Mancur Olson, 1971, *The Logic of Collective Action: Public Goods and the Theory of Groups,* Harvard University Press, Cambridge, p.6.

[7] R M MacIver, "Interests", *Encyclopaedia of Social Sciences,* VII, Mac Millan, New York, 1939, p.147.

[8] James Mill, "Essay on Government", cited in J Dunn (Ed.), *Western Political Theory in the Face of the Future,* Cambridge University Press, Cambridge, 1979, p.23.

[9] Op cit, No- 6, p.15.

[10] Bonnie J McCay and Svein Jentoft, 1998, "Market and Community Failure? Critical Perspectives on Common Property Research", *Human Organisation,* Vol-57, No-1, p.23.

[11] Op cit, No-2, p.362.
[12] Op cit, No-1, p.357.
[13] Daniel Bromley and Michael Cernea, "The Management of Common Property Natural Resources: Some Conceptual and Operational Fallacies", *Discussion paper 57,* the World Bank, Washington DC, 1989 and Shelton H Davis and Alaka Wali, "Indigenous Territories and Tropical Forest Management in Latin America", *Working Paper Series,* the World Bank, Washington DC, 1993.
[14] Deborah Sick, "Yours, Mine and Ours: Managing Water Resources in the Mexican-US borderlands", in Amita Baviskar (Ed.), *Waterscapes: the Cultural Politics of a Natural Resource,* Permanent Black, Ranikhet, Uttaranchal, 2007, p.82.
[15] Op cit, No-3.
[16] Op cit, No-14, p.82.
[17] Giles Mohan and K. Stokke, "Participatory Development and Empowerment: The Dangers of Localism", *Third World Quarterly*, V- 21, 2000, pp. 247 -68.
[18] Op cit, No-3.
[19] Op cit, No-3.
[20] Jessi C. Ribot and Nancy Lee Peluso, "A Theory of Access", *Rural Sociology*, Vol-68, No-2, 2003, p.158.
[21] Access to labour opportunities, access to markets, access to capital, access to technology, access to authority, access through social identity access via the negotiation of other social relations are structural and relational mechanisms of access, Ibid, p.160.
[22] Ibid, pp.163-65.
[23] Thompson 1975a, Weber 1978, West 1982, Watts 1983, Thongchai 1994, cited in Jessi C. Ribot, and Nancy Lee Peluso, (2003) "A theory of Access", *Rural Sociology*, Vol- 68, No- 2, p.165.
[24] Foucault 1978b, cited in Jessi C. Ribot, and Nancy Lee Peluso, (2003) "A Theory of Access", *Rural Sociology*, 68 (2), p.169.
25 P Blaikie, *The Political Economy of Soil Erosion in Developing Countries,* Longman, London, 1985, p. 165.
26 Op cit, No-2, p. 363.
[27] Government of India, Planning Commission, XI Five Year Plan, New Delhi, 2007-12, p.2.
[28] Banerjee and Somanathan while taking a different view point suggests that getting the State to make explicit commitments may be important in fighting these inequities- commitments that will increasingly have to be based on the quality of these goods rather than on physical access. Abhijit Banerjee and Rohini Somanathan, "The Political Economy of Public Goods: Some Evidence from India", *Journal of Development Economics*, Vol- 82, 2007, pp. 312-13.
[29] There have been large scale unrest among the larger section of the population and this makes apparent the negative externalities of the so called development process and reveals the inherent injustice attached to it. Vandana Shiva, *Ecology and the Politics of Survival: Conflicts over Natural Resources in India,* Sage Publications, New Delhi & UNU press, Tokyo, 1991, p.193.
[30] Ibid, p. 38.
[31]"Assessment of water supply options for urban India – large dams have no case", *SANDARP*, New Delhi, 1999, p.12.
[32] Ibid, p.184.
[33] Garett Hardin, "The Tragedy of the Commons", *Science,* Vo-162, 1968, pp. 1243-48.
[34] Op cit, No-29, p.193.
[35] Op cit, No-29, p.330.
[36] The rationale of the market mechanism is geared to private goods…rather than to public goods. Therefore 'public goods' argument supplements the case for social provisioning that arises from the need of basic capabilities, such as elementary health care and basic educational opportunities.

Efficiency considerations thus supplement the argument for equity in supporting public assistance in providing basic education, health facilities and other public goods. Amartya Sen, *Development as Freedom,* Oxford University Press, New Delhi, 1999, pp.128-29.

[37] Op cit, No-29, p.333.

[38] C. Ramchandraiah and Sheela Prasad, "*Impact of Urban Growth on Water Bodies: The Case of Hyderabad*", Working Paper No 60*,* Centre for Economic and Social Studies, Hyderabad, 2004, p. 3.

[39] "Water Management Policies and Instruments", *OECD,* Paris, 1977, p. 44.

[40] Op cit, No-29, p.332.

[41] Op cit, No-29, p.333.

[42] *The State of India's Environment 1984-8: The Second Citizen's Report,* CSE, New Delhi, 1996, pp. 394-7.

[43] Chhatrapati Singh, *Water Rights and Principles of Water Resource Management,* Indian Law Institute, New Delhi, 1991, p .55.

[44] Navroz K Dubash, "The local politics of groundwater in North Gujarat", Op cit, No-2, p.91.

[45] Iqbal Ahmed Siddiqui, "History of Water Laws in India", in Chhatrapati Singh, ed, *Water Law in* India, New Delhi, 1992, p. 306.

[46] To cite few cases, the colonial rulers monopolised the water rights in the Sambar Lake of Rajasthan and the Damodar Canal in Bengal. Their intervention in the management of natural resources in India resulted in conflicts involving natural resources, Op cit, No-29, p. 16.

[47] Op cit, No-29, p.14.

[48] David Mosse, "Ecology, Uncertainty and Memory: Imagining a Pre-Colonial Irrigated Landscape in South India", in Amita Baviskar (Ed.), *Waterscapes: the Cultural Politics of a Natural Resource,* Permanent Black, Ranikhet, Uttranchal, 2007, p. 222.

[49] In the present context, the demand for natural resources for development has led to the shrinking of this resource base for the weaker sections 'either by direct transfer of resources or by destruction of the ecological process that ensures renewability' of the natural resources, Op cit, No-29, p. 19.

[50] Ibid, p. 335.

[51] Report of the United Nations Water Conference, Resolution II (a), Mar del Plata Water Conference, 1977, p.11.

[52] Peter Rogersa, Radhika de Silva and Ramesh Bhatia, "Water is an Economic Good: How to use Prices to Promote Equity, Efficiency, and Sustainability", *Water Policy 4,* 2002, pp.1-17.

[53] Op cit, No-52, p.11.

[54] General Comment No 15, "The Right to Water" (arts. 11 and 12 of the International Covenant on Economic, Social and Cultural Rights), Committee on Economic, Social and Cultural Rights, 11-29 November 2002, Geneva.

[55] Ibid, paragraph 21-22.

[56] Ibid, paragraph 23-24.

[57] Ibid, paragraph 25-29.

[58] There is a general opposition to such freedoms and entitlements in developing countries including India. As Sen analyses, there is the claim that 'these freedoms and rights hamper economic growth and development' (1999: 148). It is perceived that the denial of such freedoms and rights helps stimulate economic growth and is good for rapid economic growth. Sometimes it is proposed to have harsher political systems-with denial of basic civil and political rights-for their alleged advantages in promoting economic development. This phenomenon is often referred to as the 'Lee Thesis' (after the former prime minister of Singapore, Lee Kuan Yew), Ibid, p.15.

[59] Op cit, No-54, paragraph 10.

[60] For further details see Ministerial Declaration of The Hague on Water Security in the 21st Century, Second world water forum 2000, accessed from internet http://www.waterlink.net/gb/secwwf12.htm on 11.03.2009.

[61] Salman M A Salman and McInerney-Lankford, Siobhan, *The human right to water: Legal and policy dimensions,* The World Bank, Washington DC, 2004, p. 12.

[62] The Water and Sustainable Development International Conference was held in Paris in March 1998 and the Ministerial Session of the International Conference on Freshwater was held in Bonn in December 2000. The declaration in both these conferences defines water as a basic human need.

[63] Op cit, No-61, p.16.

[64] The declaration was adopted unanimously by the General Assembly of the United Nations and was signed by 147 heads of States who attended the Millennium Summit. For further details on Millennium Declaration and the MDGs see www.developmentgoals.org.

[65] Madhu Bharati, "Willingness to Pay in Urban Slums of Ahmedabad", presentation made in regional forum, Manila, ADB, 17-18 April, 2008.

[66] The problem of inequality has to be addressed because a system cannot withstand beyond a point the increasing inequality that nurtures high growth. When inequality persists for a longer period, there is rising dissent among the poor, which again must either be suppressed with increasing State violence flouting every norm of democracy, and violence will be met with counter-violence to engulf the whole society. See Amit Bhaduri, "Predatory Growth", *Economic and Political Weekly*, April 19, 2008, p.14, and also see Mahendra Dev, *Inclusive Growth in India: Agriculture, Poverty and Human Development,* Oxford University Press, New Delhi, 2008, p. 291.

[67] Op cit No-36, p.1.

[68] Op cit, No-29, p.23.

[69] The primary objective of the present model as it is described by many is that of development focussing on optimal use of natural resources fuelled by free market. According to critics vast majority of the population are left with no or little resources. Market mechanism can not meet their needs as they cannot afford it. Regarding free market as the highest organising principle of society perhaps may lead to the neglect of vast majority of population and in the process reported to be created new forms of deprivation and underdevelopment The unrest among the majority of the population is imperative for them as their survival needs are not taken care of by the State nor the free market economy, rather it has threatened the very survival by the expansion of market. Op cit, No-29, p.29.

[70] Partha Chatterjee, "Democracy and Economic Transformation in India", *Economic & Political Weekly*, Vol-43, No-16, April 19, 2008, p.57.

[71] Op cit, No-36, p.1.

[72] Op cit, No-36, p.1.

[73] Op cit, No-27, p.1.

[74] Op cit, No-27, p. 6.

[75] Arjun Sengupta, K P Kannan, G Raveendran, "India's Common People: Who Are They, How Many Are They and How Do They Live?", *Economic & Political Weekly*, Vol- 43, No-11, March 15, 2008, p. 49.

[76] The State is an important actor which intervenes directly or indirectly in many activities of the people. The policies and actions of the State in production and distribution are primarily important for inclusion and exclusion of the people in the process of development. S. Mahendra Dev, *Inclusive Growth in India*, Oxford University Press, New Delhi, 2008, p. 1.

[77] Op cit, No-27, p.3.

[78] Government of India, the Planning Commission, X Five Year Plan, New Delhi, 2002-07, pp.601-634.

[79] C. Ramachandraiah, "Right to Drinking Water in India", *Working Paper No-56*, CESS, Hyderabad, May 2004, pp. 2-3.

[80] "Drinking Water and Sanitation Status in India: Coverage, Financing and Emerging Concerns", *Water Aid India,* New Delhi, 2005, p.1.

[81] Op cit, No-36.

[82] Atul Kohli, *Democracy and Discontent: India's Growing Crisis of Governability,* Cambridge University Press, Cambridge, 1991, p. 20.

[83] The outlay in the First Five Year Plan (1951-56) was Rs. 43.00 crores which rose to Rs. 18624.00 crores in the Ninth Five Year Plan (1997-2001).

[84] Lyla Mehta and Anand Punja, "Water and Well-Being: Explaining the Gap in Understandings of Water", in Amita Baviskar (Ed.), *Waterscapes: the Cultural Politics of a Natural Resource,* Permanent Black, Ranikhet, Uttranchal, 2007, p.197.

[85] Tony Addison, "Development Policy: An Introduction for Students", Discussion Paper No 2004/9, UNU-WIDER, 2004. In this point, Banerjee and Somanathan's assertion that 'the nature of political power within societies influences the allocation of public resources' aptly fits (2007: 287). How the urban centres in India have become the centre of political power and are able to bargain more than the rural has been discussed in the next chapter.

[86] Jean-Philippe Platteau, and Frederic Gaspart, "Elite Capture Problem in Participatory Development", Unpublished, University of Namur, cited in World Bank 2004 and David McKenzie & Isha Ray, 2004, "Household Water Delivery Options in Urban and Rural India", Paper prepared for the 5th Stanford Conference on Indian Economic Development, June 3-5, 2003.

[87] Op cit, No-29.

[88] David Hardiman, "The Politics of Water Scarcity in Gujarat", in Amita Baviskar, (Ed), *Waterscapes: the Cultural Politics of a Natural Resource,* Permanent Black, Ranikhet, Uttranchal, 2007, p.52.

[89] In the 1980s onwards the Scheduled Castes (SCs) established several caste-based parties and significantly increased their representation in the national politics. Consequently they were able to extract public resources from the State and several other facilities (Banerjee and Somanathan 2007: 290, 312).

[90] Op cit, No-82, p. 14.

[91] Op cit, No-82, pp.23-4.

[92] Sen argued in order to address the equity problems, especially in dealing with serious deprivation and poverty, social intervention including governmental support have an important role to play. In a broader sense, this is exactly what the social security systems in welfare states try to achieve, through a variety of programmes (1999: 120).

[93] Op cit, No-27, p.82.

[94] Op cit, No-14, p.77-8.

[95] Op cit, No-82, p. x.

[96] Op cit, No-82, p. x.

[97] B S Baviskar and D W Attwood, *Finding the Middle Path: The Political Economy of Cooperation in Rural India,* Westview press, Boulder and Sage Publications, New Delhi, 1995.

[98] Mr. Bharat Lal, (Director, Department of Drinking Water Supply, Government of India and Rajiv Gandhi National Drinking Water Mission, India) pointed out that, it is 'nearly impossible' to monitor a centralised water system in a large country like India, Keya Acharya, "MGD and India's Drinking Water: Racing Ahead at What Cost?", cited in *the Hindu*, 19 June 2008, Hyderabad. This shows the helplessness and the lack of will power among the people in responsible position. In a way, these people advocated for private sector participation in drinking water provisioning.

[99] Donald W Attwood, "Small is deadly, big is wasteful: the impact of large-scale industrial systems in western India", in Amita Baviskar (Ed.), *Waterscapes: the Cultural Politics of a Natural Resource,* Permanent black, Ranikhet, Uttaranchal, 2007, p.37.

[100] Many of India's leaders both national (such as Indira Gandhi and Rajiv Gandhi) as well as regional (such as M G Ramachandran in Tamil Nadu and N T Rama Rao in Andhra Pradesh) have resorted to such steps in order to keep their power base intact. The personalistic and populist ruling style has become a major impediment to the use of State power to solve the nation's problem.

[101] In this point Thomas Hobbes argued that the powers of a ruler are never personal powers, but are owed to entirely to his standing as holder "of the sovereign", whose primary duty is to uphold the trust of the members for which he was trusted with the sovereign power. This protection underpins the basis of the Hobbesian social contract. Individuals exchange the freedoms that they had in state of nature and pledge continued loyalty and obedience to the sovereign in exchange for the protection that the sovereign can provide. In the absence of that arrangement, which is secured by the State, people would live in a Hobbesian state of nature in which anarchy prevails and human behaviour mostly driven by self-interest not common interest, Pateman, "The Problem of Political Obligation", in R. E. Goodin and P. Pettit (Ed.), *Contemporary Political Philosophy: An Anthology,* Blackwell, Oxford, 1997, p.13.

[102] Op cit, No-82, p.17.

[103] According to Amartya Sen, development is a process of expanding the real freedoms that people enjoy. It includes both the elimination of persistent, endemic deprivation and the prevention of sudden, severe destitution. When these institutions contribute to freedoms, they are actually promoting development of the people. Further he argued, "Development consists of removal of various types of unfreedoms that leave people with little choice and little opportunity of exercising their reasoned agency. The removal of substantial unfreedoms is constitutive of development". Op cit, No-36, p. xii, 3.

[104] Op cit, No-36, p.142.

[105] Lloyd I. Rudolph and S H Rudolph, *In pursuit of Lakshmi: the Political Economy of the Indian State,* Orient Longman, Hyderabad, 1987, p. 1.

[106] Ha-Joon Chang, *Globalisation, Economic Development and the Role of the State,* Zed Books Ltd., London, 2003, p. 8.

[107] Ibid, p.19.

[108]Now many donor governments and multilateral institutions routinely attach the so-called 'governance conditionalities' to their financial assistance which call for changes not just in economic policy but also in political, legal and social institutions by the recipient country, D. Kapur and R Webber, "Governance-Related Conditionalities of the IFIs", G24 Discussion Paper Series, No-6, Geneva, UNCTAD, 2000. Overtime, the scope of such external intervention has been constantly widening, with serious implications for national sovereignty and the mandate of the multilateral institutions.

[109] J Alt and K. Shepsle (Ed.), *Perspectives on Positive Political Economy,* Cambridge University Press, Cambridge, 1990, p. 48.

[110] However, Sen argued, these efficiency results do not say anything about the equity of outcomes, or about the equity in the distribution of freedoms. A situation can be efficient in the sense that no one's utility or freedom can be enhanced without cutting into the utility or freedom of someone else, and yet there could be enormous inequalities in the distribution of utilities and of freedoms. Therefore, these efficiency results do not, on their own, guarantee distributional equity. The far-reaching powers of the market mechanism have to be supplemented by the creation of basic social opportunities for social equity and justice. Op cit, No-36, p. 119, 143.

[111] Op cit, No-3.

Chapter – 2

Urbanisation and Challenges of Water Provisioning

This chapter gives an outline of the process of urbanisation that created new challenges for the State apparatus in meeting the drinking water needs. It is divided into two sections. The first section discusses the process of urbanisation in India and the impact on basic civic services including water. The second section deals with urbanisation and access to drinking water in India. In the last chapter we discussed how different people perceive water differently. From being community's common property resource, water evolved as a commodity to be bought and sold in the market. The state and its agencies are expected to provide drinking water to the citizen as per the mandate.

Urbanisation has a rich history in India since ancient times. The most fundamental pattern of urbanisation in India is the growth of towns and cities along rivers and coasts, major waterfronts, andmajor trade routes. Many of the major cities and towns in India from the ancient period to this day have flourished on the river side or on coastal lines. The process of urbanisation in India dates back to 2350 BC or about 5000 years ago to the Indus valley civilisation.[1] Urbanisation is a process of transformation in the society which includes some drastic changes in the socio-cultural and economic activities of the people.[2] It signifies the movement of population to urban areas and the proportionate increase in the population engaged in secondary and tertiary sectors of economy. Generally Urbanisation refers to geographical (migration) as well as sociological or occupational mobility of the population.[3] Drastic changes in the pattern of living; societal behaviour have resulted in the physical growth of cities. Large scales inflow's of migrants to new livelihood options also generally leads to urbanisation. The growing urban centres and the process of urbanisation have brought in many issues to the front; from governance and management of these areas to the provision of basic civic services.

Consequently, it resulted in heavy pressure on civic amenities. The provision for drinking water to the urban people is now a pressing issue. The Planning

Commission of India, furnished sectoral assessment report and in which it noted a rapid pace of urbanisation. Lack of access to water by the urban poor is one of its major findings.[4] It further states that in such a situation, people have to pay a high price to commercial vendors for drinking water. Thus, rapid urbanisation and the growth of population in the urban areas are being considered as the prime reasons for increased water demand; access to safe drinking water supply in urban areas cannot be seen in isolation to the process of urbanization.

2.1 Contextualising the urban

The urban areas have become the melting pot for people with diverse ethnic, religious, linguistic, caste, class and cultural background. Furthermore, these are the hubs for rapid modernisation process for enterprise, innovation and the breeding grounds for politics.[5] Mohandas K Gandhi once said, "India lives in her villages." However, the context has changed drastically today. In the words of Sunil Khilnani, "India may still be a land of villages, but no Indian can today avoid the cities."[6] Cities of late have been the driving force in economic and social development in India and they continue to play a major role in India's emergence as a prominent economic and political power in the global arena.

However, criticisms have also been levelled against the very urban way of life. During the freedom movement, cities were regarded as the *legacies of colonialism.*[7] From a neo-liberalist perspective, urban areas, instead of being generative, are more *parasitic,* siphoning away resources from other areas.[8] This is evidently due to the higher purchasing capacity of the urban folks in comparison to their counterparts in the rural areas. As a result, urbanites enjoy greater accessibility to goods and services, both public and private, than their rural counterparts. On the other hand, in the classical Marxist interpretation, *city* is termed as an instrument of capital formation.[9] Nevertheless, in spite of such criticisms, the urban India continued to emerge as the hub for socio-economic and political activity.

2.2 The definition of urban areas

Usually, when defining the urban, several factors are taken into account such as: demographic, economic, social, morphological and functional. But, from 1901

onwards, the Census of India has followed its own criteria for identifying the urban areas (though the criteria followed by Census at different years essentially are not the same). However, what constitutes an urban area is a question. For want of a more adequate explanation, researchers and policy makers continue to use the definition used by the Census of India. According to 2001 Census urban areas are defined as:

1. All places with a Municipal Corporation, Municipality, Cantonment Board or notified town area committee[10] etc.

2. All other places that satisfied the following criteria:

    a. A minimum population of 5000

    b. At least 75% of male working population[11] should be engaged in non-agricultural pursuits and

    c. A density of population of at least 400 per sq.km.(1000 per sq. mile)

Apart from urban areas, there are also areas which cannot be classified purely as urban areas as per the census guidelines, but such areas can neither be defined otherwise, hence are given different terminologies considering their location. Thus, the concept of urban agglomeration was adopted by the Census in 1971 and continued thereafter. According to the Census 2001, "Urban agglomeration is a continuous urban spread constituting a town and its adjoining urban outgrowth, or two or more physical contiguous towns together and any adjoining urban outgrowths of such towns."

Thus, urban agglomeration includes the outgrowth such as - railway colonies, university campuses, port area, military camps, industrial townships etc., practically though these areas are outside the statutory limits of a town or city, but within the revenue limits of a village or villages contiguous to the town or city. The 1971 Census further clarifies, "it may not be altogether realistic to treat such areas lying outside the statutory limits of a town as rural units; at the same time each such area by itself may not come up to the minimum population limit to be treated as an independent urban unit … and is being called urban agglomeration." Such urban outgrowths also meant the increase in the population of the actual city and the people to be served for civic amenities like drinking water.

2.3 Demographic pattern in the urban areas

India continues to be rural in its population composition. But with the rapid modernisation one can see remarkable demographic changes. One such rapid change is the growth of urban centres and the population. The census 2001 reveals that 285 million people accounting to 27.78 per cent of the total population of the country lives in 4368 towns / urban areas. The urban population is one of the fastest growing in the country and it has exceeded the overall growth rate in population as well as the growth in rural population (see table 2.1 and 2.2).

Table 2.1: Trends of Urbanisation in India 1901-2001

Trend of Urbanisation in India (1901-2001)					
Census Year	Total Population	Urban Population	Percentage of Urban Population to Total Population	Decadal Urban Growth Rate	No of Towns/Urban Areas
1901	238396327	25854967	10.85	NA	1827
1911	252093390	25948431	10.29	0.36	1815
1921	251321213	28091299	11.18	8.26	1949
1931	278977238	33462539	11.99	19.12	2072
1941	318660580	44162191	13.86	31.98	2250
1951	361088090	62443709	17.29	41.4	2843
1961	439234771	78936603	17.97	26.41	2365
1971	548159652	109113977	19.91	38.23	2590
1981	683329097	159462547	23.34	46.14	3378
1991	846302688	217611012	25.71	36.47	3768
2001	-	285.31 (Million)	27.8	31.11	4368

Note: 1: Includes the interpolated population of Assam for 1981; the total population is 18041248 and urban population is 1782376.

2: Includes the projected population of Jammu & Kashmir for 1991; the total population is 7718700 and urban population is 1839400.

Source: Urban Statistics Hand Book 2000, National Institute of Urban Affairs & Agricultural Research, Data Book 2004.

Year: Period of fiscal year in India is April to March, e.g. year shown as 1990-91 relates to April 1990 to March 1991.

Units: 1 Lakh (or Lac) = 100000, 1 million = 10 lakh, 1 Crore (or Cr.) = 10000000 or 10 million. Accessed from www.indiastat.com

Table 2.2: Decadal growth of rural-urban population in different census year, India

Decadal Growth of Rural and Urban Population in India (1901-1911 to 1991-2001)			
Period	Average Annual Percentage Growth Rate of Population		
	Rural	Urban	Total
1901-11	0.64	0.04	0.58
1911-21	-0.13	0.83	-0.03
1921-31	1	1.91	1.1
1931-41	1.18	3.2	1.42
1941-51	0.88	4.14	1.33
1951-61	2.05	2.64	2.15
1961-71	2.19	3.82	2.48
1971-81[a]	1.93	4.61	2.47
1981-91[b]	2	3.65	2.39
1991-2001	1.79	3.12	2.13

Note: a: The 1981 Census could not be held in Assam. The growth rates for 1971-81 and 1981-91 have been worked out on the interpolated population figures for Assam for 1981.

: b: The 1991 Census was not held in Jammu & Kashmir Growth rate for 1981-91 is worked out with the projected population.

Source: Selected Socio-Economic Statistics, 2002, Central Statistical Organisation, Ministry of Statistics and Programme Implementation, Govt. of India.

Accessed from www.indiastat.com

As is evident from the above tables (table 2.1 and 2.1), the increase in urban population is phenomenal after independence. Due to better employment opportunities and better service options and due to considerable degradation of livelihood situations in rural areas, there have been increasing trends of rural-to-urban

migration in India. Consequently, there is a manifold increase in the urban population. Since many of these migrants could not afford to live in the city centre, they moved to the peripheries, significantly changing the context and courses of urbanisation resulting in the emergence of settlements. The urban local bodies are finding it difficult to cater to the needs of the urban population but large scale influx added pressure on the existing services like drinking water. Along the growth in slum population reveals the nature of challenge faced by Urban Local Bodies in terms of basic services.

2.3.1 Slum population

With an overall increase in the urban population, the number of people living in the squatter settlements or slums[12] in the cities has also increased considerably. Unlike the colonial period, in the post-independence India, the urban landscape and the process of urbanisation changed drastically.[13] On the eve of independence, there was an influx of refugees as an inevitable consequence of partition. These refugees settled primarily in the urban areas in the northern India. There was also increase in the level of migration and subsequently phenomenal increase in the slum population and the number of slums in many urban areas. The migrated people from the rural areas joined the people who were refugees and started to settle down in the urban peripheries.

According to the 2001 census, total slum population in the country accounted for 14.12 per cent of urban population. However, in respect of some large cities, the proportion of slum population in is high.[14] For example, cities like Mumbai account for more than 50 per cent slum population of the total city population. Many other Indian cities have also considerable population living in slums (see Table 2.3). Such an immediate development put the Indian State in a very challenging situation in terms of securing basic amenities like drinking water to the people.

Table 2.3: Slum population and their percentage in municipal corporations with population above one million in India – 2001

City-wise Total Population, Slum Population and Their Percentage in Municipal Corporations with Population Above One Million in India -2001					
Sl No.	Million Plus Municipal Corporations	States/UTs	Total Population	Total Slum Population	Percentage of Slum Population to Total Population
1	Greater Mumbai	Maharashtra	11978450	6475440	54.1
2	Delhi	Delhi	9879172	1851231	18.7
3	Kolkata	West Bengal	4572876	1485309	32.5
4	Chennai	Tamil Nadu	4343645	819873	18.9
5	Bangalore	Karnataka	4301326	430501	10
6	Hyderabad	Andhra Pradesh	3637483	626849	17.2
7	Ahmadabad	Gujarat	3520085	473662	13.5
8	Surat	Gujarat	2433835	508485	20.9
9	Kanpur	Uttar Pradesh	2551337	367980	14.4
10	Pune	Maharashtra	2538473	492179	19.4
11	Jaipur	Rajasthan	2322575	368570	15.9
12	Lucknow	Uttar Pradesh	2185927	179176	8.2
13	Nagpur	Maharashtra	2052066	737219	35.9
14	Indore	Madhya Pradesh	1474968	260975	17.7
15	Bhopal	Madhya Pradesh	1437354	125720	8.7
16	Ludhiana	Punjab	1398467	314904	22.5
17	Patna	Bihar	1366444	3592	0.3
18	Vadodara	Gujarat	1306227	186020	14.2
19	Agra	Uttar Pradesh	1275134	121761	9.5
20	Thane	Maharashtra	1262551	351065	27.8
21	Kalyan-Dombivli	Maharashtra	1193512	34860	2.9
22	Varanasi	Uttar Pradesh	1091918	137977	12.6
23	Nashik	Maharashtra	1077236	138797	12.9
24	Meerut	Uttar Pradesh	1068772	471581	44.1
25	Faridabad	Haryana	1055938	490981	46.5
26	Pimpri Chinchwad	Maharashtra	1012472	123957	12.2
27	Haora	West Bengal	1007532	118286	11.7
	Total		73345775	17696950	24.1

Source: Census of India 2001. Accessed from www.indiastst.com

2.4 Classification of urban areas

Urban areas are classified according to their population (see Table 2.4).

Table 2.4: No of urban agglomeration/towns according to their class/category, census 2001

Class	Population Size	No. of UAs/Towns
Class I	1,00,000 and above	393
Class II	50,000 - 99,999	401
Class III	20,000 - 49,999	1,151
Class IV	10,000 - 19,999	1,344
Class V	5,000 - 9,999	888
Class VI	Less than 5,000	191
Unclassified		10*
All classes		4378

* Population Census 2001 could not be held in these towns/cities of Gujarat state on account of national calamity.

Source: Ministry of Urban Development, Government of India, www.urban.nic.in

Within 27.8 per cent of total urban population, Class I cities constituted 61 per cent of the total urban population, while Class II and III comprised 13 per cent and 15 per cent respectively. The smaller towns in Class IV, V and VI together comprised 11 per cent of the total urban population. One third of India's urban population resides in large cities with population more than one million.[15] The number of metropolitan cities having million plus population has increased to 35 as per 2001 census. The classification of urban areas is taken as one of the criteria for funding and planning for water supply. The Government of India has different schemes for water supply to different class of cities. For example: the Accelerated Urban Water Supply Programme (AUWSP) which was started during 1993-94, was targeted to smaller towns with population less than 20,000 i.e. class IV, V and VI towns. Therefore, the classification of urban areas assumes its present importance.

2.5 Role of urbanisation in socio-economic development

It has been seen that there is an increased dependence of national and state economic growth on the productivity of cities in India. The cities and urban centres represent a new dynamics[16] and are crucial actors in the process of economic growth.[17] Urban areas are largely responsible for economic change and have contributed to higher economic performance in India.[18] The National Commission on Urbanisation (NCU) which submitted its report in 1988 declared that urbanisation was not an aberration in space but an inevitable concomitant of economic change.[19] The NCU further recognised that the urban settlements make a substantial contribution to national wealth.[20] Therefore, urban areas have become the *engines of growth*[21] and productivity in the country. The Eleventh FYP declares, "Urbanisation is a key indicator of economic development and should be seen as positive factor for overall development."[22] This is visible in the increasing contribution of urban areas to national economy.[23] By the year 2001, a remarkable 60% contribution to the national economy came from urban areas. Currently, the contributions from urban sector stands at estimated 62% - 63% of the Gross Domestic Product (GDP), which is supposed to increase to 75% by 2021.[24] Thus, cities in India are seen as gateways to the country's economic growth and opportunities.[25] Thus, as the nation becomes more and more dependent on the urban areas/cities for economic growth and productivity, managing and governing the cities and the infrastructures have become critical for sustaining the momentum.

2.6 Urbanisation and infrastructure

The post-independence period in India has witnessed a radical transformation in the process of urbanisation. Urban areas in India have expanded haphazardly and in an unplanned manner. Large cities and medium cities with a few lakh populations have grown rapidly. In large cities, the population influx was so high that they could not be accommodated in the existing city limits. Consequently, a rural-urban fringe has emerged in many of the cities today. The problem has further been aggravated by the private land developers, builders and industrial houses interested in making quick profits which played a vital role in the physical growth of the cities.[26] The most important consequence of this sort of an unplanned growth has been the inability of

local administration to deal with the civic needs of the people residing thereby including water. Adding to this is the growth of large urban agglomeration which has aggravated the problem of cities which are already reeling under severe problems relating to provision of infrastructure and civic services. However, all these problems have not deterred the people to migrate to urban areas. Thus the paradox, "to the rich the city's landscape is filthy and ugly … while to the poor the city is still full of vitality and variety, and is highly liveable."[27]

The urban transition however, is far from complete and with rapid urbanization over the years, concentration of people is increasing in cities. Such over growth in urban areas consequently has resulted in increased demand for basic services like drinking water, housing etc. leading to increased pressure on providing basic services in urban areas.[28] Accordingly, there is deterioration of civic services such as lack of adequate quality and quantity of water and sanitation facility, inadequate housing facility, improper solid waste management, poor transportation facilities, etc. Adding to the chaos is the inability of the city level administration to adequately maintain the infrastructure.[29] This has resulted in the deterioration of quality of life with widening the gap and creating disequilibrium between demand and supply of basic essential services and infrastructure in urban areas.[30]

Thus, rapid urbanisation in the past few decades has exposed the weaknesses and the deficiencies of urban infrastructures in India including provision of drinking water. But above all is the problem of safe drinking water to all. With about one-third of the total Indian population living in urban areas contributing to more than 60 percent of the country's national income, "adequate provisioning of drinking water supply to all in urban areas remains a formidable challenge."[31] Among all the consequences of rapid urbanisation, safe drinking water continues to be high on agenda.

2.7 Urbanisation and access to drinking water in India

The course of urbanisation in India after 1800 AD was determined by British colonial economic policies and social attitudes. Though it was done primarily for their own convenience, the Britishers were responsible for the creation of the three major metropolitan port cities[32] of Madras (now Chennai), Calcutta (now Kolkata) and

Bombay (now Mumbai). These cities at that time were the leading colonial cities of the world and at present the changing face of urban India.

The most important contribution of the British rule to urbanisation in India was the introduction and improvements of urban amenities like piped water supply in these major cities. However, provision of basic amenities like piped water supply and others were limited to the civil lines and the cantonment areas during the colonial period and the remaining area of the cities and towns remained outside the purview of such facilities. Also, urban administrative bodies were set up to look after the civic amenities in several cities after 1881.[33]

2.7.1 The Post independence period

While examining the impact of urbanisation on urban environment, Sivaramkrishnan summarised the situation in the cities as "cities running out of water."[34] This comment from a prominent urban sector specialist in India indicates the gravity of the urban drinking water problem. In contrast, it has been commonly accepted that there is a close co-relation between the pace of urbanisation and the availability and accessibility of safe drinking water to the urban people.[35] As the pace of urbanisation gets higher momentum, providing safe drinking water to the urban people has become increasingly challenging. The challenges comes primarily from two sources: one, the ever increasing demand both from domestic as well as industrial needs for water and second, the dependence on water sources which are located at faraway places. In the first place, as discussed earlier, there is a sharp increase in the urban population over the years. This has put enormous pressure on the existing water supply infrastructure in cities. With very limited allocation coming from the government, the capacity of city level administration to improve the infrastructure facilities for water supply is highly limited.

On the other hand, since most of the cities/ UAs (urban agglomerations) have already destroyed, exhausted, mismanaged and polluted the in house water sources[36] or are rapidly destroying them[37], they are increasingly dependent on far away sources[38] such as the existing large dams or new proposals of large dams[39] to satisfy water demands at escalating costs.[40] On the face of it, several problems have emerged with respect to the people's access to safe drinking water in the urban areas. The

problems commonly seen in any urban centres in India are no universal access, ineffective distribution, deprivation among the people, highly polluted water, problem of fluorosis, and presence of high level salinity in water in certain areas, water shortage and wastage due to an age old infrastructure, etc. Though these problems are commonly found in the cities/UAs around the country, these are by no means the only problems urban areas in the country are face today. Due to the heavy pressure of population and an uneven growth of urban areas, the ability of the civic bodies to provide safe drinking water to all have become a nightmare.

Even though urban areas are playing a major role in the socio-economic and political developments in India, still a National Urban Policy is yet to come in order to streamline the provision of civic services like drinking water. A major step towards this direction was taken when the NCU[41] was set up in 1988. But, however such a policy statement have not materialised except for limited efforts by successive governments at different periods. Contrary to this, the successive Five Year Plans (FYP) laid down several policies broadly for the effective administration and provision of drinking water in urban areas.

2.8 Urbanisation, five year plans and provision of drinking water

The first and second FYPs were dominated by agricultural sector and industrial development and the problems of urban areas got the least priority. However, by the end of first FYP, several institutional setups were introduced for urban areas including the Ministry of Works and Housing (MoWH) which was later renamed as the Ministry of Urban Affairs (MoUA). This later on became the nodal agency for planning and execution of drinking water projects in the urban areas.

Development of urban areas received further boost with the commencement of third FYP. At this stage a model town planning act was prepared by the Town and Country Planning Organisation (TCPO) which led to the enactment of such acts at the state level. The plan recognised the role of municipal administration in the effective provision of civic services including drinking water. The third FYP also initiated the urban community development programmes to deal with the problems of slum areas such as the provision of drinking water.

The fourth FYP stated that in urban areas, water supply schemes should be looked upon as a service which has to be paid for by the direct beneficiaries through capital contributions and water charges. It also made a case for the improvement in the realisation of water charges in urban areas.

The importance of urban and urban affairs was apparent from the fifth FYP document itself. For the first time, the fifth FYP had a separate chapter on urbanisation and urban affairs. It laid down different objectives of urbanisation such as augmentation of civic services in urban centres including drinking water. The plan gave particular emphasis to completion of spill over schemes on water supply.

The sixth FYP for the first time recognised the regional variations in the level of urbanisation in different states in India. Consequently, Bihar, Orissa and Assam were categorised as having low level of urbanisation while Gujarat, Maharashtra and Tamil Nadu were at the higher end. The plan also emphasised the role of small towns in rural development as the growth centres. The plan also noted that of the total 3,119 towns, only 118 had sewerage facilities and 1029 towns did not have piped water supply system. Thus, the sixth FYP while emphasising the need to develop the provision of basic services in the small and medium sized towns, outlined a number of schemes. The sixth plan covered 133.91 million people accounting to 81.1 per cent of urban population providing them with drinking water facility.

The seventh FYP put the major thrust on the strengthening of administration at the city level in order to meet the civic needs in a proper manner. The seventh plan declared, “As the problems created by rapid urbanisation are stupendous and have wide-ranging social and political ramifications, there is national concern for checking the deterioration of conditions in our cities and towns.” Thus in this context the role of union government was justified and led to the creation of National Urban Infrastructure Development Finance Corporation (NUIDFC). The NUIDFC was supposed to provide capital for the development of infrastructure in small and medium towns for better delivery of civic services such as drinking water.

With regard to the access of the urban poor to basic services like water supply and other civic services, the eighth FYP provided for a combined package of Urban

Basic Services for the Poor (UBSP) and Environmental Improvement of Urban Slums (EIUS). This was supposed to provide effective means of overcoming the problems of basic civic services like drinking water. Other main thrust areas in the plan were development of infrastructure and employment generation. During the plan period the 74th Constitution Amendment Act was passed which gave constitutional status to the Urban Local Bodies (ULBs).

The ninth FYP identified the key urban concern as the growing gap between demand and supply of basic services like drinking water. It stated, "drinking water supply and sanitation facilities are very important and crucial for achieving goal of *health for all*." It also recognised the lack of comprehensive urban planning in the past resulting in a large scale backlog of developmental activities. Thus, in the ninth plan the major thrust of urbanisation were: upgradation of urban infrastructure, promoting efficient and affordable basic services for all, promoting private sector participation in the provision of such infrastructures and the involvement of community and NGOs in urban planning and management, democratic decentralisation and strengthening municipal governance.

In the tenth FYP, the deteriorating level of urban infrastructure such as water supply and the low capacity on the part of city level administration to maintain it was recognised as a major area of concern. Thus, the tenth plan put special emphasis on urban sector reforms and bringing private sector expertise and capital through Public-Private Partnerships (PPP) for improving efficiency and better water service delivery. The tenth plan also saw the launching of a major flagship programme entitled The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) launched to give focussed attention to integrated development of urban infrastructure and services in select 63 cities. The Urban Reform Incentives Fund (URIF) was also created to give impetus to implementing reforms in the urban areas.

The eleventh plan recognised that the investment needed to meet the requirement for urban water supply had been inadequate in the past. Therefore, in the eleventh plan under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) programmes, 63 cities and 5098 towns are respectively covered

to supply drinking water needs of the people. The major thrust areas in the eleventh plan are; (1) strengthening ULBs, (2) deregulation and development of lands for better productivity of cities, (3) creating conducive atmosphere to private sector investment in urban infrastructure and to establish regulatory framework to oversee the functioning of public and private sector. There is also provision to set up National Urban Infrastructure Fund (NUIF), to provide source of funding for bankable projects/schemes to ULBs.

The five year plans in India is the major policy document which outlines the priorities and strategies of the government. It is observed in all the five year plans that in most of the cities, there is deficiency of water supply infrastructure both in terms of coverage [42] and quality. The situation has been worsening with the unabated pace of urbanisation and urban sprawl. Since a major chunk of population in urban areas do not have access to the organised drinking water source, majority of them have evolved their own mechanism and source to gain access to water. However, at times these sources are not only necessarily potable, but also sometimes highly contaminated.[43] In this context it would be interesting to look at the current status and sources of safe drinking water provisioning in urban areas.

2.9 Sources of drinking water in urban areas

In the olden days, due to less population and a simple way of living people were self-sufficient with their household water needs. A dug well at home or in the vicinity was the major source of household water needs. In certain areas like Tamil Nadu tanks were the major source of household water needs.[44] Organised water supply system was an alien concept to the urban folks. However, the modernisation process and the colonial rule brought several changes to the urban attitudes. Slowly, organised water supply systems started to appear in the urban landscape of India. In India, the first modern water supply system was installed in the Calcutta (now Kolkata) Municipal Authority area in 1870.[45] Thereafter, slowly the modern water supply systems were adopted in other cities and towns of India.

There are three major sources of water for a city's water needs: rivers, lakes/tanks and ground water (as seen from the water withdrawal source by the

different city level authorities). Most of the cities are primarily dependant on water from rivers,[46] and large lakes/tanks either natural or manmade.[47] However, in the run up to meet the growing demand from city folks in the present context, the city level authorities are increasingly depending upon the ground water source. Slowly, ground water has become, in certain cities, the major source of drinking water for the people.

However, people in the urban areas get access to drinking water from either public or private sources. The major components of public water supply systems are;

(a) Piped water supply

(b) Public stand posts (PSPs)/community taps

(c) Community water tanks

(d) Public tanker supply

(e) Public tube wells/bore wells, and

(f) Public dug wells

While piped water supply to households remains as the main source of access to water for the majority of urban population in India, there are other provisions for the people in areas where there is no infrastructure for piped water supply. The PSP/community tanks is a water tap erected on a platform at a strategic location so that all will have easy access to water, and municipal authorities supply water to a common tank in a locality and people in turn have access to water form such community water tanks. In certain cases, in the absence of all such infrastructure and during summer and times of water scarcity, municipal water tankers are brought into service to supply water. There is also provision for public tube wells/bore wells and dug wells which serve certain section of population.

Private sources of drinking water on the other hand, has emerged in the present context as a major source of urban water needs as a cumulative effect of the failure of state authorities to meet the urban water demands[48] and the ever increasing demand from the people. The private source consists of:

(a) Private tanker supply

(b) Private tube wells/bore wells

(c) Private Wells

(d) Bottled water/packaged water, and

(e) Water vendors.

The private sources, taking advantage of the helpless situation of the urban folks flout norms and at times operate illegally. The private water tankers and vendors supply untreated water and they do not take responsibility for its quality. These suppliers get water for sale by drilling bore wells and tube wells which are mostly illegal or by flouting the prescribed norms. Their major source of water supply is groundwater on which their business thrives. In contrast, the bottled water/packaged water is increasingly seen as a safe drinking water source as compared to other public and private sources of water. However, it is seen over and again that the firms who are in the business of supplying bottled water/packaged water frequently flout norms and the quality of water they supply is highly suspect.

However, bottled water/packaged water has not been confined to private sector alone. The state institutions involved in the supply of safe drinking water are endorsing and in certain cases themselves producing and supplying packaged water. For example: the Agra Jal Sansthan (AJS) supplies packaged water to residents in certain areas under its operation.[49] Similarly, the Delhi Jal Board (DJB) had the plans to sell bottled/packaged water at a price lower than the normal market price of other private water bottle brands.[50]

2.10 Access to drinking water in urban areas - current scenario

The NCU while acknowledging the utter neglect of urban water sector by the state authorities described it as a national disgrace. While describing the water supply in cities it said, "it is a matter of national disgrace that, in 1988, there were prolonged periods when Hyderabad and Madras received piped water supply for only about 20 minutes a day-with many localities doing without water for days on end."[51] This sets the tone of water sector scenario in urban areas of India.

Even though water supply to urban households was not given much importance[52] in the initial years of planning in India (as compared to rural areas) however, in course of time the importance attached to it has increased phenomenally. In the process after sixty years of planning and development, several organizational setups has been established through the intervention of government both at the central and state level in order to provide safe drinking water to the urban population.

According to 2001 census, access to tapped water in the urban areas is limited to 65 per cent of the total urban population, while 27 per cent of the population has no access to assured sources of potable water. Contrarily, the average per capita supply ranges between 54 to 160 Litres Per Capita per Day (LPCD), while the average hours of supply stretches between 2 to 6 hours per day with uneven timings.[53]

On the other hand, with respect to household level consumption in urban areas, around 70% of the households reported to have been served by tap and 21% by tube well/hand pump. Around 66% urban households were having their principal source within their premises, while 32% had it within 0.2 kms. While 41% households had their sole access to the source of drinking water, 59% were sharing a public source.[54]

2.10.1 Access to drinking water across the states/UTs

It appears that there are noticeable disparities among different Indian states as regards access to drinking water is concerned. Available data on the state/Union Territory (UT)-wise population having access to safe drinking water facilities through different sources are given in table 2.5. The figures are stated to be tentative.

Table 2.5: Access to water: state wise and UT wise

State-wise and UT wise Urban Population having Access to Water Supply Facilities					
States/UTs	**Estimated Population**	**Population Provided with Water Supply* Through** (Population in ' 000)			
		House Service Connection	**Public Stand Posts**	**Total**	**percentage**
Andhra Pradesh	19238	9407	4508	13915	72

Arunachal Pradesh	231	117	25	142	61
Assam	3100	600	200	800	26
Bihar	11892	4187	5327	9514	80
Delhi	13300	9560	3740	13300	100
Goa	557	439	118	557	100
Gujarat	16810	13227	3307	16534	98
Haryana	3705	2.108	402	2510	68
Himachal Pradesh	596	509	87	596	100
Jammu & Kashmir (Kashmir)	1378	11240	50	1290	94
Karnataka	16750	9245	3595	12840	77
Kerala	7680	3260	2764	6024	78
Madhya Pradesh	25000	16200	8800	25000	100
Maharashtra	34309	23744	10176	33920	99
Manipur	969	481	176	667	68
Meghalaya	457	221	201	422	92
Mizoram	258	63	30	93	36
Nagaland	296	232	0	232	78
Orissa	4877	859	2221	3080	63
Punjab	8496	5212	317	5529	65
Rajasthan	12897	10318	2579	12897	100
Sikkim	156	137	8	145	93
Tamil Nadu	25525	13836	8851	22687	89
Tripura	553	136	327	463	34
Uttar Pradesh	33000	16100	16500	32600	99
West Bengal	18495	6261	9505	15766	85
Total States	**260525**	**147699**	**83814**	**231513**	**89**
Andaman & Nicobar Islands	109	98	9	107	98
Chandigarh	762	610	152	762	100
Dadra & Nagar Haveli	15	9	5	14	93
Daman & Diu	47	6	1	7	15
Lakshadweep	30	0	20	20	67
Pondicherry	678	598	80	678	100
Total UTs	**1641**	**1321**	**267**	**1588**	**97**
India	**262166**	**149020**	**84081**	**233101**	**89**

Note: *: Indicates Accessibility only, Adequacy and Equitable distribution of water supply is not as per the prescribed norms of Govt. India.

Source: Rajya Sabha Unstarred Question No. 122, dated 19.11.2001, accessed from www.indiastat.com

As it is seen from the table above, the highlights of access to drinking water in urban areas of states/UTs level are:

- The national average of access to drinking water for states is 89 per cent while for the UTs it is more than the national average at 97 per cent.

- In the state category, only the population in the states of Delhi, Goa Gujarat, Himachal Pradesh, Jammu & Kashmir (Kashmir), Madhya Pradesh, Maharashtra, Meghalaya, Rajasthan, Sikkim, Utter Pradesh had access to water above the national average (89 per cent).

- While access to safe drinking water is below 40 per cent in the states of Assam, Mizoram, Tripura, and UT of Daman & Diu, population in rest of the states and UTs had access above 60 per cent but below the national average.

- In the UTs, except Daman & Diu and Lakshadweep, more than 90 per cent population in other UTs had access to drinking water.

2.10.2 Access to water in large cities vs. smaller cities/towns

There is also significant level of variations in the percentage of people having access to safe drinking water in different cities. While the mega cities claim that all urban households had access to safe drinking water either through piped supply, hand pump or tube well, smaller cities had lower percentage of population having access to safe water.[55] In terms of access to piped water supply system, 73% of the population in Class I cities had access to piped water supply against only 58% in Class IV to Class VI cities.[56] On the other hand, it is also claimed that in many of the metropolitan cities like Delhi, Calcutta and Mumbai, the per capita water supply is claimed to be more than 200 litres per capita per day (LPCD) while in smaller towns and cities, it is much less. Therefore, there is the existence of widespread differences in terms of service delivery through various indicators of efficient service in Indian cities and towns.

2.11 Benchmarking of drinking water delivery in Indian cities

While we analyse the service efficiency indicators of city level administration vis-à-vis the actual delivery of safe drinking water to the people, there is a great deal of mismatch. At a micro level, there are wide differences among cities in terms of

actual service delivery through a user's lens (see table 2.6). These indicators show the level of efficiency of the municipality or the water board in terms of service delivery.

Table 2.6: Service delivery indicators in different Indian cities

Service indicators in different Indian cities					
Name of the City	**Coverage (%)**	**Hours of Supply**	**Frequency of Supply**	**Per capita Supply (lpcd)**	**Nodal Institution**
Hyderabad	81.7	2	Alternate Day	160	HMWS&SB
Vijayawada	70	5	Daily Twice	137	VMC
Visakhapatnam	85	1	Daily	58	VMC
Itanagar		3	Daily Twice	61.68	PHED
Chandigarh	100	10	Daily	322	CMC
Delhi		4	Daily	155	DJB
Ahmedabad		2	Daily	116	AMC
Rajkot	85	2	Daily	88	RMC
Surat	97	2	Daily	180	SMC
Vadodara	90	6	Daily	135	VMC
Bangalore	60	6	Alternate Day	100	BWSSB
Mysore	100	6	Daily	190	MMC
Bhopal	67			130	BMC
Indore	90	1.15	Daily	80	IMC
Jabalpur	89			95	JMC
Greater Mumbai	82	NA	NA	170	GMMC
Bhubaneswar	63	NA	NA	263	PHED
Ludhiana	80	12	Daily	140	LMC
Ajmer-Pushkar	85	1	Daily	150	PHED
Jaipur	95			97	PHED
Chennai	80			65	CMWSSB
Allahabad	100	12	Daily	111	Allahabad Jal Sansthan
Dehradun	100	4	Daily	130	Uttaranchal Jal Sansthan
Kolkata	66	10	Daily	100	KMC
Vijayanagaram (AP)	34.7	1.15	Once in 2 Days	70	Municipality
Guntur (AP)	75	1	Daily	105	Municipal Corporation
Ramagundam (AP)	15	2	Once in 2 Days	79	Municipal Corporation

Source: City Development Plans (CDP), Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Ministry of Urban Development, Government of India.

While in certain cities (as per their official records) the level of infrastructure coverage extends to 100% (Chandigarh, Mysore, Allahabad and Dehradun), some cities has 60% to 80% average coverage. In terms of supply duration, while some cities provide more than 10 hours, others do so between 1 to 2 hours. Further, in certain cases, people get daily water supply, at times twice a day for a few hours to once in alternate days in others. Again there are wide variations in per capita. While some cities claim more than 300 Litres per capita per day (LPCD), in some other cities it is around 60 lpcd.

On the other hand, in the face of crisis in urban water supply, the primary issues are those shown in efficiency indicators such as: the wastage in water while distribution and transmission (otherwise called as Unaccounted for Water (UFW), fixing meters to house service connections, tariffs or water charges, and revenue collection. Thus, while some cities are ahead in checking wastages and extending services to a maximum number of people, others are behind (see table 2.7).

Table 2.7: Service efficiency indicators across Indian cities

Service efficiency in different Indian cities					
Name of the city	**Unaccounted for Water (UFW) (%)**	**Connections Metered (%)**	**Revenue collection efficiency (%)**	**Average tariffs (Rs/m3)**	**New connection fee (Rs)**
Ahmedabad	-	3	67	1.39	100
Amritsar	57	4	69	9.34	950
Bangalore	45	95.5	112	20.55	1740
Bhopal	-	0	178	0.6	1500
Chandigarh	39	79	94	5.04	530
Chennai	17	3.5	152	10.87	1930
Coimbatore	41	100	75	3.66	3000
Indore	-	0.1	89	2.79	2500
Jabalpur	14	0	75	1.5	1984
Jamshedpur	13	0.9	100	4.51	300
Kolkata	35	0.1	100	1.13	1000
Mathura	-	0	106	0.62	500
Mumbai	13	75	189	4.6	660

Nagpur	52	40	80	6.6	1675
Nashik	60	80	92	4.32	1250
Rajkot	23	0.4	45	5.07	1850
Surat	-	1.9	100	1.66	345
Varanasi	30	0	64	3.17	2375
Vijayawada	24	6	114	2.18	5500
Visakhapatnam	14	1.3	86	8.55	2000

Source: 2007 Benchmarking and Data Book of Water Utilities in India, MoUD, GOI and ADB, P-3.

From the table above, one of the major problem one can notice in respect of the Indian cities is the considerable wastage of water. In some cities it is as high as 60% of the total potable water available. Due to this, the duration of supply is either less or low pressured, or inadequate or in some cases, certain areas are left uncovered. Again another major area of concern is the cost for obtaining a connection which acts like an entry barrier for the people, especially to the underprivileged.

2.12 International benchmarks in access: position of India

In an international perspective, Indian cities are far behind in terms of water service delivery and making water available to a larger number of people. As can be seen from the table 2.8 and table 2.9 below, cities in India are striving to make water available to larger sections of the people keeping in view the twin principles of equity and sustainability.

Table 2.8: Access: A cross country perspective

Country	Access to Water Supply (%)
Philippines	87
Sri Lanka	83
China	75
India	89
Pakistan	88
Bangladesh	97

Source: India Infrastructure Report 2004.

The overall access to drinking water in India is claimed to be 89 per cent in urban areas which is almost the same in other Asian countries (see table 2.8). However, in terms of duration of water supply, while majority of the Indian cities are

struggling between 1 to 2 hours (barring few cities where it goes up to 12 hours), international cities like Colombo has water supply upto 22 hours daily (see table 2.9).

Table 2.9: Per capita water availability: selected cities

City	Hours of Supply	Litres Per Capita per Day (LPCD)
Singapore	24	150
Jakarta	24	80
Dakar	24	90
Colombo	22	119
Kuala Lumpur	24	132
Paris	24	150

Source: Water boards/water supply agencies in each city.

Most cities in UK and France supply water for 24 hours, while the average per capita supplies of these countries are 135 and 156 lpcd respectively. In terms of transmission and distribution - losses or the UFW- Singapore, where the UFW is as low as 5%, is taken to be the benchmark. However, as we can infer from the table, some cities in India has upto 60 per cent of water going as waste, and the average wastage of water during transmission and distribution in Indian cities ranges between 30-50 per cent.

A macro analysis of issues involved has been attempted so far about the access, but these appear to be at variance at the micro level. In fact, the situation does not reflect the facts and hides the widespread inequities existing in access to safe drinking water. Further, it seems to be concealing the growing inequities in access, quality and quantity of water available to different parts of the city.[57] In fact, the lpcpdsupply in Indian cities is calculated by a very simple formula: dividing the total installed capacity by the existing population.[58] It would be useful if we quote the Draft National Slum Policy 2001;

> "…Residents at Bangalore get water on alternate days, or once in three days, that too at odd hours which are not certain. This means variable waiting time ranges from a minimum of 1 hour to 3 hours. Drinking water is bought by almost all @ Re.1 per pot. Residents of Bhubaneswar and Cuttack reported minimum waiting periods of one hour and insufficient number of bore wells. (Ratio of 1 for 110 families in Cuttack). In Tirupattur, water is supplied once a week, at odd hours,

and rationed @ 6 pots per family. The residents walk 1 to 1.5 miles for this and spend several hours."

Therefore, it has been realised that despite all efforts and policy statements with regard to people's access to drinking water, most of them in the lower strata do not have assured sources of drinking water.[59] Most studies have shown how iniquitous access to water has been prevalent in India. For example, the National Commission on Urbanization has observed how water supply system was unequal, unjust, and highly biased in favour of the rich. It stated how the wealthiest and often the most politically powerful members of the society had better access to drinking water. The NCU further stated, "More than the lack of water it is inequitable distribution which causes real problem."[60]

People in slums and low income localities, receive water for few minutes a day through the Public Stand Posts (PSP) where water is available for short duration at a low pressure while the supply is erratic.[61] In addition, many among the poor do not get water through PSP because of the inherent accessible problems and have to depend on other sources of water like private or public bore wells, hand pumps or (highly erratic) tanker water supply. The number of persons dependent on one PSP or tube well or tanker is high, resulting in long queues and longer waiting hours. For example, in Ahmadabad most slum households only had access to PSP with an average of 50 shelters per PSP. In addition, water is only available intermittently for two hours in the morning and half an hour in the evening.[62]

A study of five slums by Nunan and Satterthwaite in Bangalore found that two of the slums had no water supply. They had to depend on bore wells and public fountains. One tap and one or two bore wells is meeting the drinking water requirements of 800 to 900 people. Residents from four slums had to walk for 20 meters to 1 kilometre to fetch water.[63] In contrast, the per capita water consumption is lowest. The quality of water in such cases is generally unsatisfactory and at times causes the outbreak of water borne diseases and epidemics.[64] For instance, in a recent incidence in Bholakpur, a lower middle class locality in Hyderabad on May 05, 2009, at least nine people died and over were 200 people admitted to hospital after consuming contaminated water from the tap supplied by the Hyderabad Metropolitan

Water Supply and Sewerage Board.[65] Such an incident in a city like Hyderabad in fact raises serious doubts over the quality of water supplied by the water board. Institute of Preventive Medicine (IPM) in Hyderabad has found the presence of E.Coli in water samples collected from Bholakpur. These bacteria are found in human faeces. Such incidents highlight that the provision of drinking water like other services to the people in such areas is not put in proper place. Since most of these slum settlements are declared as illegally constructed, city level authorities do not take the responsibility for providing safe drinking water for their inhabitants.[66] Nonetheless, due to the political compulsions, the city level administration is compelled to provide at least the basic minimum services to these areas which are termed as (in the language of city administration) *illegal settlements*[67] or the *unintended city* which consists of the growing number of poor housed in slums and urban streets.[68]

Moreover, in the present context due to commodification of water, people having higher purchasing power (socially affluent people, politically powerful and higher castes) have better access to *protected* water. While in the poorer areas and in the slums there is lack of provision of adequate minimum water as highlighted in previous section, there is wasteful consumption in the form of usage of water intensive facilities on the part of the socially and economically affluent people having higher capacity to pay. The poor who constitute the majority who lacks such purchasing capacity gets little share, and in the process, water becomes a scarce resource for them. Thus, the *social construction of power structure* makes water *artificially scarce* for the poor.[69]

Another harmful trend seen is that the first person to get water supply is the person who pays the highest or the most influential, and that has become the cardinal principle for water allocation. Consequently in this process, the poor having no influence or money power are left out to the mercy of the governmental agencies and are given the least priority while allocating water.[70] On the other hand, in the official records all these areas are shown as covered or having assured sources of drinking water though there may be widespread variations in individual access and availability.[71] It is important however, to note that in an area in which a hand-pump or a stand-post has been installed or if there is some kind of water supply system, the

area is termed as covered with safe drinking water facility atleast in official parlance.[72] There appears to be no check on whether the installed facility is functioning or not, and whether people in the area are utilizing water from that facility.

2.13 Crisis in water supply in the urban areas

The central government in India as well as the various state governments since independence have implemented different programmes and schemes[73] and allocation for improving urban water supply has gone up gradually. However, it continues to be a challenge because of neglect or overlooking of interlinked factors. One of the challenges needless to mention is population. This has put much pressure on the present style of management and service delivery systems, and eventually the crisis in water supply deepened.

Crisis in urban water supply on the other hand, is not because of actual scarcity of water but of poor management practices.[74] Most of the water supply infrastructure in Indian cities is outdated; sometimes as old as 40 to 60 years. However, new water service connections to households and settlements have often added to deteriorating the existing supply system. On the other hand, bureaucratic delays, resource crunch with the urban local bodies and adequate expertise are often pointed out as the factors responsible for the benefits not reaching the targeted sections of the population.[75] Poor monitoring, inefficient operation and maintenance, institutional overlapping of responsibilities and unsustainable resource management practices are some of the systemic deficiencies. In addition, the fund crunch, inadequate distribution and overexploitation of ground water have further infuriated the problem for provisioning urban drinking water in India.[76]

In addition, the process of water service delivery in India is one marked by top-down approach from the centre (Government in India) to the states (federating units in the Indian union) and from the state governments to the municipalities or the local government, where the third tier of the government remains ineffective carrying out only what is directed. The problem is even worse in the urban areas where decentralization is non-existent.[77] For example, in almost all states it is the state level

Public Health Engineering Department (PHED) which is responsible for water supply to all urban areas in the state. All the programmes and the policies are decided at the central or the state level and passed on to the local level agencies for implementation. Slowly in many metropolitan and mega cities there are parastatal agencies or water boards created exclusively for water supply and sanitation without any popular representation and people's participation.[78] Furthermore, in the entire process of drinking water provisioning, the role of NGOs, civil society organizations and ultimately, the community participation is poorly defined and at times non-existent. The beneficiaries of water services, the consumers and members of community are overlooked while plans and projects are being finalized. Even though there is administrative decentralization, sufficient fiscal and political decentralization is lacking.

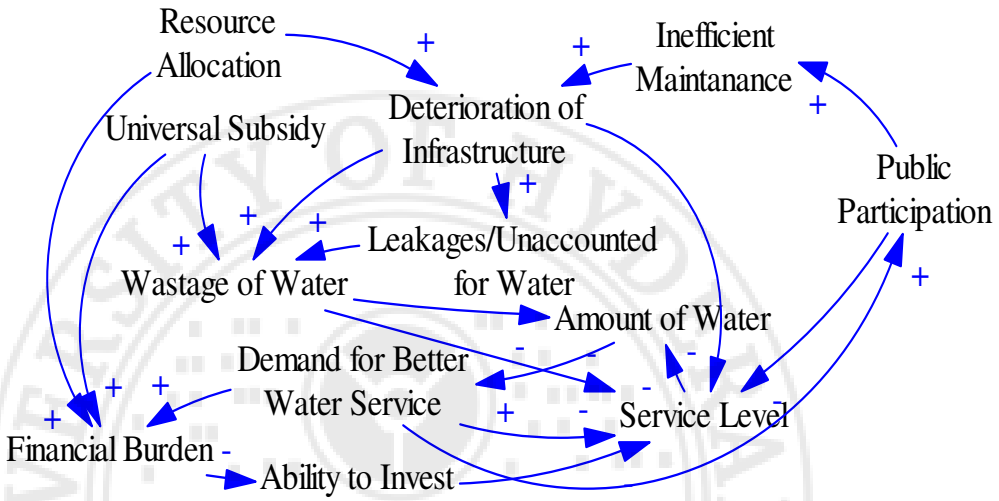
Further, the age old infrastructure and poor maintenance amounts to leaking pipelines and high transmission losses. There is water theft and unauthorized water connections which altogether amounts to a high level of unaccounted for water. For instance, unaccounted for water in Delhi amounts to around 50 per cent of the total water pumped into the system, whereas it is around 35 to 40 per cent in the case of Hyderabad and Bangalore.[79] Nobody is held accountable for that much amount of water and consequently, the quantity of water supplied to the people is decreased and supply to the poorer areas is overlooked.

Water pollution, both surface and underground, emerged as one of the major concerns among the policy makers in India. Among others, the major area of worry is the pollution of water at the source level. Due to rapid urbanisation, industrialisation and increased usage of fertilizers, quality of water has decreased considerably. There is also the problem of fluorosis and salinity in water making it inconsumable for the people.

2.14 Vicious circle of urban water supply

As stated earlier, the crisis in provisioning of safe drinking water in urban areas is a combined result of several interlinked factors and one problem affects the status of other. This becomes the vicious circle of urban water provisioning (see figure 2.1).

Figure 2.1: Vicious Circle of Crisis of Water Supply in Indian Cities



The above figure (1) illustrates the basic feature of urban water supply in India and the major factors that affect people's access to drinking water. It represents how the water supply crisis is a vicious circle where the mismatch between various factors leads to further crisis. In the first case, resource allocation to this sector has been comparatively low over the years as is evident in different Five Year Plans, which has never touched the 2 per cent mark of total plan outlay (Five Year Plans). The situation has further deteriorated with the universal subsidy system in this sector (due to universal subsidy, rich tend to waste water while poor do not get connected to the water supply system for their bare minimum needs on account of being illegal settlers).

In this situation, financial burden on the municipalities or other state agencies responsible for water delivery increases while simultaneously decreasing the capacity on the part of the same agencies to invest on their own. Therefore, this has a direct impact on the service level, declining it severally. The decline in service level amounts to the decrease in quantity of water supplied which is also a result of the

wasteful consumption pattern due to universal subsidy. With the decline in quantity of water supplied the demand for better water service increases which in turn puts financial burden on the municipalities or other agencies to improve services.

In the second case, public participation in the entire process of decision making in the execution of water projects are very low and at times non-existent. Consequently, public pressure on the service provider, be it municipality or other, remains very low increasing the level of inefficiency and delay in maintenance. Since there is deterioration of infrastructure, transmission losses and leakages increase simultaneously increasing the total volume of wastage of water amounting to the decrease in the quantity of water supplied. Once the amount of water supplied decreases, demand for better water service increases simultaneously increasing the level of public pressure and public participation. Hence, the cycle of urban water supply in India continues.

2.15 Issues in urban water supply

The major issues[80] in urban water sector in India are: problem of access (no universal access to safe drinking water), deficiency in infrastructure (no universal physical coverage), poor and unreliable service (both in terms of quality and quantity), inefficiency in distribution system (huge transmission and distribution losses), inefficiency in usage and wastage (lack of awareness of efficiency in water use), universal subsidy (which is misused by the rich and affluent, while the poor do not get water for their minimum needs), disparity in water distribution (affluent areas get more supply than the poorer areas), and non-participatory urban water supply (it is mostly a bureaucratic function with no public representative).

Nonetheless, the crisis in urban water supply is not confined to the physical and technical aspects. Rather, the state policy itself has played and still plays a major role in depriving certain sections of the people from access to drinking water. In the words of Iyer, "The state has failed to assure the availability of safe drinking water to all; what is supplied is inequitably distributed, with excessive use by some and meagre supplies to others. There is an implicit subsidisation of the rich through low water rates and an inadequate coverage of the poor by the public system, forcing them to buy water at much higher rates from private sources."[81]

The present chapter dealt with the process of urbanisation and access to safe drinking water in India. In course of the discussion, it was seen that how the rapid urbanisation process has fuelled the demand for increase in safe drinking water. It was also seen that how several interlinked factors have complicated the adequate provisioning of safe drinking water to urban areas, the existing disparities among states, among cities and among different localities within a city. At the end it was also seen that several state policies equally are responsible for the mess up in the provisioning of safe drinking water to urban areas in India. The next chapter, 'Provisioning of Safe Drinking Water in Urban Areas in India: Role of the State' would examine the role of the State with regard to the provisioning of safe drinking water in urban areas of India.

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[1] According to Ramachandran, the urban history of India can be broadly discussed under five phases; (i) The Pre-Historic period – 2350 to 1800 BC, (ii) The Early Historical period – 600 BC to AD 500, (iii) The Medieval period – AD 600 to 1800 (includes the Mughal period – AD1526 to 1800) (iv) The British period – AD 1800 to 1947, and (v) The Post-independence period. Also see, Champakalakshmi (1987) for a detailed historical analysis of urbanisation in South India. R. Ramachandran, *Urbanisation and Urban Systems in India,* Oxford University Press, Delhi, 1989, p. 24.

[2] Ram Bali Singh, "Process of Urbanisation in the Third World" in Jayamala Diddee and Vimala Rangaswamy (Ed.), *Urbanisation: Trends, Perspectives and Challenges,* Rawat Publications, Jaipur, 1993, pp.55-74.

[3] Ibid, p. 57.

[4] *India Assessment 2002: Water Supply and Sanitation,* the Planning Commission, Government of India, 2002, p. 61.

[5] Interesting debates on this issue was raised by Gyan Prakash (2002). References are made to the discussion between Gandhi and Nehru during the freedom struggle regarding the importance of village vis-à-vis urban areas, later, after independence Shiv Sena (a regional political party from the Indian state of Maharashtra) made Mumbai a platform to launch its aggressive political agenda, the emergence of dalit politics, the movement of slum dwellers and the proliferation of NGOs (Non-Governmental Organisation), all of these were possibly partly due to a vibrant urban space. Gyan Prakash, "The Urban Turn", *The Cities of Everyday Life,* Sarai Reader, New Delhi, 2002.

[6] Sunil Khilnani, *The Idea of India*, Hamish Hamilton, London, 1997, p.109.

[7]Amitabh Kundu, "Access of Urban Poor to Housing and Basic Amenities; Issues Concerning Vulnerability, Social Security and Governance", Seminar Paper on *Social Security in India*, Institute of Human Development, April 15-17, 1999.

[8] C. Ramchandraiah, "Urbanisation and Urban Services", in C. H. Hanumantha Rao and S. Mahendra Dev, (Ed.), *Andhra Pradesh Development: Economic Reforms and Challenges Ahead,* CESS, Hyderabad, 2003, P-576; S G Vestha, R. Nanda and Truman A. Hartshorn, "A Neo-Capitalist Perspective on Third World Urbanisation and Economic Development", in Jayamala Diddee and Vimala Rangaswamy (Ed.), *Urbanisation: Trends, Perspectives and Challenges,* Rawat Publications, Jaipur, 1993, p.18.

[9] R. N. Sharma, "The Politics of Urban Space", *Seminar,* 2000, Available online at http://www.india-seminar.com/

[10] All places notified under law such as Municipal Corporations, Municipalities, Town Panchayats and Cantonment Boards have been treated as urban units irrespective of satisfaction of the demographic criteria, Census of India 2001. Accessed from http://censusindia.gov.in

[11] In male working population, only male workers are considered. Also, workers engaged in agricultural activities viz., cultivation, agricultural labour, livestock, forestry, fishing and plantation, orchards etc were excluded for computing the percentage of workers engaged in non-agricultural activities, Census of India 2001. Accessed from http://censusindia.gov.in

[12] According to the Census 2001, Slum is defined as i) All areas notified as 'Slum' by State/Local Government and UT Administration under any Act; ii) All areas recognized as 'Slum' by State/Local Government and UT Administration which have not been formally notified as slum under any Act; iii) A compact area of at least 300 population or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities. See for further details, http://censusindia.gov.in/Data_Products/Data_Highlights/Data_Highlights_link/metadata_highlights.pdf

[13] See for example, Mohan and Dasgupta. in their working paper discussed extensively on the process of accelerating urban growth in India and the policies perused by GOI in this respect to sustain growth. The authors are optimistic on managing the urban areas. Rakesh Mohan and Shubhagato Dasgupta, "Urban Development in India in the 21st Century: Policies for Accelerating Urban Growth", *Working Paper No. 231*, Stanford Centre For International Development, October 2004.

[14] Op cit, No-3, p. 56.

[15] *India: Water Supply and Sanitation, Bridging the Gap Between Infrastructure and Service,* Background Paper-Urban Water Supply and Sanitation, the World Bank, India, 2006, p. 7.

[16] How urbanisation is interlinked to industrialisation, development and growth is discussed. Often urbanisation and industrialisation become instruments for further development and growth. Abanti Kundu, "Urbanisation in India: A Contrast with Western Experience", *Social Scientist,* Vol-11, No-4, 1983, pp. 37-49.

[17] Marie Llorente and Marie Helene Zerah, "The Urban Water Sector: Formal Versus Informal Suppliers in India", *Urban India*, Vol- XXII, No- 1, January-June, 2003.

[18] K C Sivaramakrishnan, "The Challenges of Urbanisation", in V. A. Pai, Panandikar (Ed.), *Fifty Years of Swaraj: Highlights and Shadows,* Konark, New Delhi, 1998, pp.260-1.

[19] Report of the National Commission on Urbanisation, Ministry of Urban Affairs, Governemnt of India, 1988, p. 270.

[20] Ibid, p. 16.

[21] Adrina Allen, "Managing Sustainable Urban Development: A Technical or Political Task", in K. R. Gupta, (Ed.), *Urban Development Debates in the New Millennium: Studies in re-Visited Theories and Redefined Praxs,* Atlantic Publishers, New Delhi2005, p. 7.

[22] Government of India, Planning Commission of India, XI Five Year Plan, Vol-III, New Delhi, 2007-12, p. 394.

[23] Op cit, No- 4, p.16.

[24] Op cit, No-22, p. 394.

[25] Swati Ramanathan (b), "India's Urban Phenomenon", Accessed from internet www.janagraha.org on 12.04.2008.

[26] Op cit, No-1, p. 295.

[27] Op cit, No-1, p. 17.

[28] Ramaswamy R Iyer, *Strive for Sustained Supply*, 2005 accessed from internet http://www.tribuneindia.com/2005/specials/tribune_125/main15.htm on 12.01.2008; and K C Sivaramakrishnana, Amitabh Kundu & B N Singh, *Handbook of Urbanisation in India: An Analysis of Trend and Processes,* Oxford University Press, New Delhi, 2005,p. 106.

[29] Such state of affairs at the city level is a result of financial constraints on the part of the municipality and the rapid urbanisation process which has limited the ability of the urban local bodies in the management of public services. See for details, M Nageswar Rao, "*Studies in Urban Public Sector",* Ashish Publishing House, New Delhi, 1985, p. 27.
Another view that is emerging among the city planners, bureaucrats and other experts on urban management is the high level of floating population who come to the city temporarily for employment. In this context it becomes very difficult on the part of city administration to address the issues of providing civic services to the people. This view has become a dominant theme of discussion at a number of seminars and conferences on drinking water supply, 2004-08. Also see Llorente & Zerah 2003.

[30] M Nageswar Rao, *Studies in Urban Public Sector,* Ashish Publishing House, New Delhi, 1985, p.26.

[31] Joel Ruet, V S Saravanan and Marie-Helene Zerah, "The Water and Sanitation Scenario in Indian Metropolitan Cities: Resources and Management in Delhi, Calcutta, Chennai, Mumbai", *CHS Occasional Paper No-6,* French Research Institutes in India, New Delhi, 2002, p.3.

[32] Kundu argues that these colonial cities were the 'nerve centers' of colonial exploitation and often there existed several other institutions like, banks, warehouses, agencies, insurance, etc. Op cit, No-16.

[33] Op cit, No-1, p.68.

[34] Op cit, No-18, p. 264.

[35] Fiana Nunan and David Satterthwaite, "Governance and environmental improvements: A comparative analysis of the city case studies", *Urban Governance, Partnership and Poverty – Theme Paper 21,* 2000; V. Ratna Reddy and Bhagirath Behera, "Environment and Suatainable Development: Status and Strategies" in C. H. Hanumantha Rao and S. Mahendra Dev (Ed.), *Andhra Pradesh Development: Economic Reforms and Challenges Ahead,* CESS, Hyderabad, 2003, pp. 547-575. Sivaramakrishnan 1998, Sivaramkrishnan, Kundu & Singh 2005, Rao 1985, Kundu 1993, Llorente & Zerah 2003.

[36] In most of the Indian cities, due to unplanned growth and regulation, the existing water tanks and lakes in the vicinity of the city limits are rapidly vanishing. In this context, there is a nexus between the legislators, the bureaucracy and the private real estate builders, who all wants their share of profit at the cost of public good. Due to rapidly increasing population, there is a high demand for housing. To make a quick profit and to meet the immediate necessity, the real estate builders or the land mafias go on building houses even though it amounts to flouting the norms and rules. At times such constructions are declared illegal but then the lobby in favour of the land mafias is so powerful that, the governments come out with several schemes to regularize those illegally constructed buildings by paying a certain amount of money (which is very meager) as fine. This has resulted in the destruction of natural lakes in the vicinity of cities thus grossly compromising on the recharge of ground water. It can be cited here that, in almost all cities in India, ground water table provides a very grim picture. The perfect example of this entire phenomenon is Hyderabad. In Hyderabad, there used to be 932 tanks/ lakes in 1973. However, it has come down to around 200 currently. For more details, please see Ramachandraiah & Prasad 2004.

[37] "Assessment of Water Supply Options for Urban India – Large Dams Have No Case", *SANDARP*, New Delhi, 1999, p.5.

[38] In the last few years it is seen that, in major cities in India there is an increasing level of dependence on far away sources like rivers for the increasing city's drinking water needs (see table for major cities with their drinking water sources).

City	**River**	**Distance (kms)**
Hyderabad	River Krishna (Nagarjuna Sagar) River Godavari	160

Bangalore (now Bangaluru)	River Cauvery (KR Sagar)	100
Delhi	River Bhagirathi (Tehri), Renuka dam, Kishau Dam	250 280 300
Ahmedabad	River Sabarmati (Dharoi)	150
Chennai	River Krishna (Telugu Ganga)	400

Source: Water boards/municipalities for each city.

[39] Op cit, No-37, p.5.

[40] Biksham Gujja and Hajara Shaik, "A Decade for Action: Water for Life", *Economic and Political Weekly,* Vol-40, No-12, March 19, 2005, p.1087.

[41] There is no national urban policy in India. The National Commission on Urbanisation (NCU) which was set up in 1986 was seen as a step towards this end. The commission was particularly very critical about the low level provisioning of basic civic services to the people in urban areas.

[42] No city in India has 100% water supply infrastructure coverage. This fact came to light while browsing through the CDP (City Development Plan) documents of various cities submitted to the Ministry of Urban Affairs, GOI as part of the JNNURM scheme.

[43] Op cit, No-31, p.2.

[44] David Mosse, *The Rule of Water: Statecraft, Ecology, and Collective Action in South India*, Oxford University Press, New Delhi, 2003.

[45] S C Rangwala, *Fundamentals of Water Supply and Sanitary Engineering,* Charotar, Anand, India, 1986.

[46] Most of the major cities and towns in India are on the banks of major rivers. Hence naturally it becomes the primary source of household water needs. Examples: Delhi- river Bhagirathi, Bhubaneswar & Cuttack-river Mahanadi, Vijayawada-river Krishna, Sambalpur-river Mahanadi, etc.

[47] In certain cities which are not on river banks or otherwise, the major source (for some cities it is an additional source) of drinking water needs, are the naturally formed or manmade lakes and tanks. Examples- Hyderabad- Osman Sagar and Himayat Sagar (and Hussain Sagar earlier (HMWS&SB), the wide network of tank system in Tamil Nadu.

[48] Sivani Daga, "Private Supply of Water in Delhi", Centre for Civil Society, Accessed from internet www.ccsindia.org on 15.10.2008.

[49] The researcher received more insight on this point, during a visit to the Agra Jal Sansthan (AJS). More elaborate description of the issues and problems of water supply in Agra however came through a discussion with the officials of the AJS and by personal interviews with the people in Agra.

[50] The DJB plans to supply packaged water to the areas with short supply particularly, in South Delhi. In order to facilitate distribution and remove middleman activity, the DJB has set up kiosks (*Jal Suvidha Kendra*) from where the packaged drinking water can be distributed. For further details please. see www.delhijalboard.nic.in.

[51] Op cit, No-19, p.16.

[52] Op cit, No-19, p.293.

[53] From the recent City Development Plan (CDP) documents submitted as a part of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM-2005) to the Ministry of Urban Development, Government of India, it is seen that, in many of the Indian cities water supply is on alternative days, some have once or twice a week. It may be noted that the duration of supply is just an hour even when it is on a daily basis.

[54] Op cit, No-22, p.402.

[55] Op cit, No-15, p.11.

[56] Op cit, No-15, p.11.

[57] Op cit, No-18, p.164.

[58] Op cit, No-18, p.164, Op cit, No-37, p.7.
[59] Op cit, No-7.
[60] Op cit, No-19, p.294.
[61] Such instances are abundant in which water scarcity is acute and the worst affected are the poorest in cities. Such cases are often reported both in print and electronic media.
[62] Fiana Nunan and David Satterthwaite, "Governance and Environmental Improvements: A Comparative Analysis of the City Case Studies", *Urban Governance, Partnership and Poverty – Theme paper 21,* 2000, p.6.
[63] Ibid.
[64] Op cit, No-7.
[65] *The Hindu*, Hyderabad, May 06, 2009.
[66] Op cit, No-15, p.12.
[67] Lot of literature is documented on this issue. This has been further elaborated in the next chapter on State Policy on Water Supply.
[68] Op cit, No-5, p.5.
[69] Samanta Sahu and Rajashree Padhi, "Access to Drinking Water in India: State and Market Interventions", in B. K. Thappliyal et al, *Democratisation of Water,* Serials publishers for NIRD, New Delhi, 2006, p. 476.
[70] A larger understanding of this point came about while having discussions with Dr. Jasveen Jairath, who is an independent expert on water issues in India. That there is a bias towards the rich at the water allocation stage itself is well documented.
[71] Vishal Narain, "India's water crisis: avenues for policy and institutional reform", *TERI Information Monitor on Environmental Science*, Vol-2, No-1.
[72] Op cit, No-37, p.7.
[73] The major programmes of the central government in India with a mandate to provide safe drinking water to the urban areas include: (1) Urban Water Supply Programme (UWSP) started during the Third Five Year Plan and (2) the Accelerated Urban Water Supply Programme (AUWSP) started during the Eighth Five Year Plan. Apart from this Government of India (GoI) launched its major flagship programme (3) Jawaharlal Nehru National Urban Renewal Mission (JNNURM) during 2005 of which water supply in the selected cities were given the highest priority. The programmes and policies on provisioning on water to urban areas have been elaborately discussed in the next chapter on "Provisioning of Drinking Water in Urban Areas: The Role of State in India."
[74] Asit K Biswas, (Ed.), *Systems approach to Water Management,* Mc Graw Hill, Kogakusa, Tokyo, 1976.
[75] Op cit, No-7, Op cit, No-71.
[76] Op cit, No-7.
[77] *Drinking Water and Sanitation Status in India: Coverage, Financing and Emerging Concerns,* Water Aid India, New Delhi, 2005.
[78] For instance, in Hyderabad it is the Hyderabad Metropolitan Water Supply and Sewerage Board (HMWS&SB), an autonomous body created by state legislation in 1989, which looks after the water supply services. Same is the case in Delhi - Delhi Jal Board, Bangalore – BWSSB, Agra - Agra Jal Sansthan and so on.
[79] Op cit, No-53.
[80] Further discussions on this point have been made in the next chapter on State policy on drinking water.
[81] Op cit, No-28.

Chapter – 3

Indian State and Provisioning for Drinking Water

This chapter is divided into three sections. The first section deals with the provision of water in the constitutional, legal and administrative provision. The second section discusses different water supply schemes in India since 1954 and the third section deals with people's access to water. In chapter two, issues associated with people's access to drinking water in urban areas were dealt with. While discussing the present status of access to drinking water in urban areas, an attempt is made to link how the state policies or State itself is a party to the present crisis in people's access to drinking water in urban India. In continuation of the earlier discussion, this chapter too focuses on the State and its role in provisioning drinking water to the citizens in urban areas, with a thrust on the changing role of the Indian State in creating provision of drinking water in urban areas.

3.1 Background

There are three important phases in the history of independent India that have to be considered while discussing the delivery of public services to the citizens: (1) 1947-67, (2) 1970-1980, and (3) 1991 till now.

The years following independence in India, problems such as poverty, illiteracy, malnutrition and unemployment were rampant among the general populace of the country. The national leaders including Jawaharlal Nehru saw the wisdom of investing huge sums in heavy industries. This kind of rapid industrialisation of the country, according to the national leaders, was the straight forward way to overcome the problem of poverty, illiteracy, malnutrition and unemployment.[1] The result was that the first and the second Five Year Plans (FYPs) were dominated by demands for rapid industrialisation.[2]

However, the situation changed with the rising food insecurity towards the late 1960s and the continuing problems of poverty and illiteracy. The rise of Indira Gandhi to the national political scene in India witnessed a dramatic shift in the role of State in

India in terms of basic service delivery to its citizens. Indian State adopted the rhetoric of removing poverty and providing universal access to public goods.[3] Under her *Garibi Hatao*[4] program, first put forward during her election campaign in 1971, the Indian State, for the first time, made an explicit pledge to provide public goods to everyone. This rhetoric saw subsequent governments making even broader commitments to the electorate. Consequently, there were several pro-poor policies and programmes that were given go ahead during those years. Hence, the role of State in India took a pro-active turn in terms of welfare policies to the electorate with the rise of Indira Gandhi to the national politics. The same schemes and programmes were continued till the late 1980s under different governments. The 1970s in India saw a phenomenal increase in the role of the State in the areas of poverty reduction and provision of social welfare services.

But 1990s saw the Indian State taking a 'u' turns altogether. In terms of fulfilling people's expectations and the approach towards provisioning of basic civic services to the people, the State started retreating. In late 1980s, the V P Singh led *Janata Dal* (People's Party) coalition was in power at the centre for a brief while (1989-90). The Indian National Congress (INC) was back to power in 1991. The congress party formed a coalition government under the prime ministership of P V Narasimha Rao (1991-96). New Economic reforms were introduced in this period with far reaching consequences. These policy measures included: deregulation, liberalisation and privatisation in accordance with the principles set by the *Washington Consensus.*[5] Consequently, the reforms saw the Indian State withdrawing from its erstwhile responsibilities. A good part of these was earmarked for the private sector.

While this broadly corresponds to the changing role the State in India has played for development as well as service delivery, the water sector and the provisioning of drinking water in urban areas was not immune to such kind of a development in the wake of the reforms in India. As fallout of such a move by the State, private sector participation in terms of financing, management and partnerships in implementation of water supply schemes and programmes are encouraged. As it is seen in major policy documents such as the National Water Policy 2002 and the five year plans (eighth five year plan onwards), there is lot of encouragement to the private

sector to take up the water supply projects to deliver water to the people leaving the State only as a facilitator.

3.2 State provisioning of drinking water in urban areas

It must however be stated that water supply and sanitation service were first recommended as priority areas even in 1940s by the Bhore Committee and the Environmental Hygiene Committee with elaborate plans.[6] The State took upon itself the responsibility for providing water to citizens. Rich references to such a commitment can be seen in the first five year plan.

It would be relevant to examine the provision of drinking water to the people in the Constitutional framework as well as the legal framework in this context. References to State provision of drinking water to the people can be seen in the constitutional framework.

3.3 Water: the constitutional framework

The Constitution of India has several provisions with regard to different uses of water. However, the prime responsibility for water provisioning, according to the Indian Constitution, rests with the states in the Indian union. The Constitution of India states, "Water, that is to say, water supplies" falls within the legislative jurisdiction of the state governments vide item 17 of the List II-State List[7] under Seventh Schedule referred to in the Article 246(3)[8] of the Constitution. State governments are vested with the constitutional right to plan, implement, operate and maintain water supply projects. While this is the main constitutional provision that determines the jurisdiction of the Centre (Government of India) and the state (provincial government in the Indian union) with regard to water, there are several other major provisions that determine individual's access to water in India.

Article 15(2) of the Constitution explicitly states that no citizen shall "on grounds only of religion, race, caste, sex, place of birth or any of them" be subject to any disability, liability, restriction or condition with regard to "the use of wells, tanks, (or?) bathing ghats." This is one of the most important provisions in the Constitution of India determining a person's access to water which finds its place among the fundamental rights. The provision in this article was inspired by the issue of the

socially disadvantaged classes in India being denied access to water and water sources within the community during the pre-independence period and before. This became a prominent feature of the Indian freedom struggle and was reflected in the debates around the framing of this provision that took place in the Constituent Assembly.[9] The other important provision is enumerated in Article 21 which states "the protection of life and personal liberty." This provision of the constitution has been liberally interpreted by the Supreme Court of India to include all facets of life including *right to water.* This provision in the Fundamental rights chapter of the Indian constitution empowers the individuals/citizens to move to courts in case of infringements. There are several other provisions of significance though not justiciable and plays an important role in determining people's access to water.

The Directive Principles of State Policy (DPSP), which the Constitution in Article 37 declares to be non-enforceable, but is considered central to the governance of the country identify the principle of equal access to community resources. Article 39(b) in this provision recognizes the principle of equal access while declaring that the "ownership and control of the material resources of the community are so distributed as best to sub serve the common good." Thus, the provision mandates that the State shall direct its policy towards securing this goal.

In addition, the central government is also empowered by several constitutional provisions, which endows the centre with additional responsibility of jurisdiction in certain situations. Thus, while under Article 245 of the Constitution, Parliament makes laws for the whole or any part of the country and a legislature of the state for the whole or any part of the territory of the state (which also extends to water resources),[10]the Parliament can, under Article 252, make laws even on issues in respect of which it has no powers, provided the legislatures of two or more States resolve that the Parliament should make such a law. Thus, in this regard we have the Water (Prevention and Control of Pollution) Act, 1974, which was a law on a topic relatable to Entries 6 and 17 of the State List.[11] While the constitution of India provides for wide ranging provisions as discussed, in order to facilitate people's access to water, several of these provisions are flouted by the private parties as well as the Central and state governments from time to time for narrow interests. In such

situations, the judiciary (the Supreme Court of India and different state High courts) have stepped in to the rescue of the common people's interests.

3.4 Water: the legal provision

If one cares to peep into the history, laws related to use of water date back to the period when the Code of Manu was prescribed, over 3000 years ago. During the ancient times when water resource was available in plenty and the demand was less, the principle of discovery had applied i.e. whoever discovers the resources dominate over it.[12] This principle had also found its place in the old Roman law and the Common law of England and was later prevalent in pre-independence India. However, according to Ramanathan, in the modern jurisprudence Indian water law can be viewed generally in three contexts - the colonial, the post-colonial and the constitutional.[13] While the colonial context stretches till India became independent in 1947, the post-colonial period continues to this day in the form of many unrepealed legislations of the colonial era.

The constitutional context started with the adoption of a new constitution in India in 1950 and is manifested both in statutes and in court decisions from time to time. The colonial law makers appeared to be more concerned in irrigation-related laws.[14] They treated water more as an irrigation resource in order to generate revenue. Treatment of water as an irrigation resource during the colonial period also meant that the right to water got intertwined with the right to land[15] and water resource was identified with land resource. The post-colonial context witnessed a slight shift in the system of acquisition of right to water. The Central Public Health Engineering and Environmental Organisation (CPHEEO) in India states three ways of acquisition of right to water[16];

- Riparian system – belongs only and equally to those who possess access to water through ownership of land abutting on a stream.
- Prior appropriation system – two principles of prior appropriation system, (a) beneficial use of water and not land ownership gives the basis of the right to use water, and (b) priority of use and not equality of right is the basis when there is not enough for all.

- Administrative disposition of water use rights – envisages authorisation by the government for using any water declared to be public.

In the post-colonial period, with organised water supply, sewerage, and water pollution, a broad classification of the water supply laws have emerged. According to Panicker those include[17]:

- Laws establishing water boards for Urban water supply
- Laws enacted for water supply in metropolitan cities
- Laws for water supply in the state as a whole
- Laws on regulation of groundwater extraction, use and transportation
- Laws on protection of water sources
- Laws for supply of water to specific industrial areas.

3.4.1 Judicial intervention

The constitutional jurisprudence of the country developed by the judiciary placed drinking water as a derivative right, meaning right that is derived, within the purview of right to life under Article 21 of the constitution.[18] Whenever the shortage of drinking water was brought to the attention of the judicial bodies, their response reflected a deep concern about the issue in terms of basic human rights.[19] In several instances, the Supreme Court of India as well as the state high courts interpreted the right to water as a part of right to life under article 21 of the constitution - part of fundamental rights of the people. The Supreme Court of India invoked Article 21 of the constitution which guarantees right to life and hence to water and environment in 1980.[20]

The Supreme Court of India has intervened in several cases relating to provisioning for drinking water to the citizens. In some of these cases the Court has declared drinking water as a bare necessity, a community property and a fundamental right. The Court observed that State is the trustee of all natural resources including water and it cannot be transferred to the private party. In the following section an overview of some selected cases is taken up.

In 1981, in the *Francis Coralie Mullin*[21] case, the Supreme Court declared, "the right to life includes the right to live with human dignity and all that goes with it, namely, the bare necessaries of life such as adequate nutrition, clothing and shelter

and facilities for reading, writing and expressing oneself in diverse forms, freely moving about and mixing and commingling with fellow human beings. The magnitude and components of this right would depend upon the extent of economic development of the country, but it must, in any view of the matter, include the bare necessities of life and also the right to carry on such functions and activities as constitute the bare minimum expression of the human self." By stressing on the *bare necessities* of life, the Court actually made a point on the availability of food, water, shelter, clothing etc without which *human dignity* cannot be ensured.

The Court recognized that water is a community source which is to be held by the State in public trust in recognition of its duty to respect the principle of inter-generational equity. In *M.C. Mehta v. Kamal Nath*[22] the Supreme Court in 1997 declared that "our legal system – based on the English common law – includes the public trust doctrine as part of its jurisprudence. The State is the trustee of all natural resources which are by nature meant for public use and enjoyment. Public at large is the beneficiary of the seashore, running waters, air, forests and ecologically fragile lands. The State as a trustee is under a legal duty to protect the natural resources. These resources meant for public use cannot be converted into private ownership." The Court in this particular case made natural resources such as water a community property, the ownership of which cannot be transferred to the private party.

In 2000 in the *Narmada Bachao Andolan v. Union of India*[23] case, the Supreme Court, held that "water is the basic need for the survival of human beings and is part of the right to life and human rights as enshrined in Article 21 of the Constitution of India and can be served only by providing source of water where there is none."

In similar words the Allahabad year High Court held right to life as a fundamental right under Article 21 of the Constitution which includes the right to, enjoyment of pollution free water and air for full enjoyment of life. It is further held that if anything endangers or impairs that quality of life in derogation of laws, a citizen has a right to have recourse to Article 32 of the constitution for removing the pollution of water, air, which may be detrimental to the quality life.[24] In a similar way in 1996 the Supreme Court in its judgment *Chameli Singh v. State of Utter Pradesh*

held that Article 21 includes the right to food, water, decent environment, medical care, shelter and education.[25]

The precautionary principle was applied by the Supreme Court in a case relating to the setting up of an industry in the vicinity of the water body. The Court struck down the notification issued by the Government of Andhra Pradesh exempting an oil industry located in the vicinity of two major water reservoirs from the purview of an earlier ban imposed on the setting up of such units within a 10k.m. radius of the two reservoirs. In 2001 in the case, *A.P. Pollution Control Board v. Prof. M.V. Nayudu*, when initially faced with ambiguous reports of experts, the Supreme Court referred the case to the National Environmental Appellate Authority for further opinion. The scientific reports of independent expert showed that there was every possibility that the unit would pose a potential threat to the major drinking water source. The Court observed, an order of exemption carelessly passed, ignoring the precautionary principle could be catastrophic. It concluded that the industrial unit question had failed to discharge the onus of showing that there would be no danger of pollution even if it adopted the suggested safety measures.[26]

The above illustrate a few of the landmark judgements whereby, the Supreme Court in India appeared to have made the State liable to the citizens. Some of these judgements by the Court have found its manifestation in the policy provision on drinking water.

3.5 Water: administrative provision

The Environmental Hygiene Committee was appointed by the Government of India (1948-49) for an overall assessment of environmental hygiene in India. The Committee suggested certain optimum service level for communities based on population groups. Simultaneously, by the Code of Basic Requirements of water supply, drainage and sanitation (IS: 1172-1983) of the National Building Code of India, a minimum of 135 Litres Per Capita per Day (LPCD) is recommended for all residents provided with full flushing system for excreta disposal. Though the Manual on Sewerage and Sewage Treatment recommends a supply of 150 lpcd wherever sewerage system exists or is planned, a minimum of 135 lpcd is now recommended[27] (see table 3.1).

Table 3.1: Recommended LPCD water supply

Sl no	Classification of towns / cities	Recommended maximum water supply levels (LPCD)
1	Towns provided with piped water supply but without sewerage system	70
2	Cities provided with piped water supply where sewerage system is existing/planned	135
3	Metropolitan and mega cities provided with piped water supply where sewerage system is existing/ planned	150

Source: CPHEEO manual, 1992, p.11.

3.6 Drinking water and national water policy

The first National Water Policy (NWP) was formulated in 1987. It declared water as a prime natural resource and a basic human need. It gave the highest priority to drinking water provisioning. However, soon the policy was realised to be a mere proposition and it appeared there was no serious action taken on it. To quote Iyer, "the operationalisation of the NWP 1987 did not make much headway; it continued to remain largely a set of general propositions."[28] Though in paper it accorded priority to drinking water, in practice it devoted "disproportionate amount of space to large irrigation projects."[29] Subsequently, in 1991 the government adopted a number of reform measures and the 74th Constitution Amendment act was passed in 1994. All these developments changed the context and hence there was need for a new water policy. The revised policy was adopted in 2002. The striking difference between the NWP 1987 and NWP 2002 is with regard to the participation of the stakeholders as well as the private sector. While there was no mention of private sector participation in the NWP 1987, in 2002 it was encouraged on grounds of generating finance, introducing corporate management and improving service efficiency and accountability.[30] Taking cue from the NWP, different states formulated their state water policies.

3.7 Drinking water and state water policies

The same trend of giving priority to drinking can be seen in the policies of different states such as Rajasthan, Madhya Pradesh, Himachal Pradesh, Karnataka, Maharashtra, and Utter Pradesh. Some of the main features of the policies of states on water include;

- Declaration of water as a natural resource.
- According priority to drinking needs on any available water.
- To make the water supplies self-sustaining or at least to meet the O & M costs.
- To involvement the community in planning and managing drinking water supply in urban areas to make the community responsible for O & M of water supply.
- Encourage private sector in financing and implementation of projects for introduction of new technology and benefits by management expertise.

3.8 Provision of drinking water: agencies and institutions

Drinking water supply to the citizens is traditionally seen as the domain of the State. The State, through its various agencies, is directly involved in ensuring water to the people through plans, programmes and executing them in order to supply water. However, institutional responsibilities for water supply in India are highly fragmented, which complicates access to water. Besides the public health engineering agencies of the state governments, state level parastatal agencies, city level water supply and sewerage boards and local governments, a number of unregulated private companies (formally and informally) are involved in the sector. Furthermore, these arrangements differ across states.[31] These agencies are expected to implement the decision taken at the national or at the state level and therefore remain at the mercy of the political decision-making. This has an adverse effect on the municipal services, as they do not have adequate funds to mobilise revenue and have to depend extensively on the state. The hierarchical administrative set-up, unclear divisions of responsibilities dealing with common issues coupled with political patronage, heavy subsidisation of water which is not properly targeted, slack enforcement of pollution control and regulation laws has been the feature of urban water governance in India.

In other words, India shows a fractured institutional set-up.[32] Management of water is through a top-down approach and is virtually a government monopoly.[33] The following section gives an overview of the institutions involved in water supply to the urban areas.

Institutional responsibility for water is divided between the Government of India and the State Governments as per the Seventh Schedule in the Constitution of India. While the centre is equipped with River Boards Act-1956 and Inter-state Water Dispute Act-1956[34], the state governments are entrusted with the jurisdiction over domestic water supply. Further the 74th Constitution Amendment Act[35] gave the urban local bodies the sole responsibility of water supply to the people. However, a number of other national as well as state agencies / institutions are involved with water supply either directly or indirectly.

The Ministry of Urban Development (MUD) is the nodal Ministry for policy formulation and guidance for the Urban Water Supply (UWS). The Ministry's responsibilities include broad policy formulation, institutional and legal frameworks, setting standards and norms, monitoring, promotion of new strategies, coordination and support to state programmes through institutional expertise and finance. The Ministry is also responsible for managing international sources of finance.

The Central Public Health and Environmental Engineering Organisation (CPHEEO), created in 1953, is the technical wing of the MUD, which advises the Ministry in all technical matters and collaborates with the state agencies about water supply and sanitation activities. CPHEEO plays a critical role in giving technical sanction to externally funded and special programmes and those parts funded by the Life Insurance Corporation (LIC) of India. CPHEEO also plays a central role in setting design standards and norm for urban water supply.

As the Technical Wing of the MUD, the CPHEEO deals with the matters related to the following:

- Technical scrutiny of water supply and sanitation including solid waste management schemes submitted by the state governments / local bodies and union territories, for urban sector.

- Techno-economic examination of schemes received from State Governments and local bodies seeking assistance from external funding agencies such as World Bank/ JBIC/UNDP and Bilateral agencies etc.

- Monitoring of water supply schemes under the centrally sponsored Accelerated Urban Water Supply Programme (AUWSP).

- Guidance to state governments in regard to formation of Statutory Water Supply and Sewerage Boards.

- Preparation of the draft material for five year plans and annual plans in respect of water supply and sanitation.
- Assisting the MUD in all matters connected with urban water supply and sanitation and solid waste management including furnishing material for Parliament Questions and VIP references.

- Monitoring and managing information system of water supply & sanitation in the country.

- The issues related to the Millennium Development Goals (MDGs) in regard to water supply.

While the CPHEEO at the national level oversees the plans and programmes, at the state level the Public Health Engineering Department (PHED) is responsible for planning and execution through the municipalities or the local level governments. The state governments supply water to the people through (i) urban local bodies (ii) state level water boards or, (iii) statutory and non-statutory bodies at the city level. In most cases, the concerned state departments, such as the Public Health Engineering Department (PHED), the Public Works Departments (PWD), the Urban Development Department and the Department of Local Self-government through their divisional and district offices carry out the capital works. In few states, such as Tamil Nadu and Karnataka, the responsibilities are vested with the respective Water Supply and Sewerage Boards. There are statutory boards created as specialised agencies to supply water in larger cities or metropolises. As observed by the CPHEEO, these boards are created to financially bail out the local bodies which face serious handicaps in terms

of finance and fund raising. According to the CPHEEO, "these boards are devices by which state governments will be able to establish corporate public entities to construct, manage and operate water and sanitary services on a fully commercial basis in large metropolitan areas as well as in smaller urban communities."[36]

It further states that such boards will have the advantage of; (1) Increased efficiency resulting from financial autonomy, (2) Improved ability to raise capital with confidence and (3) Better realisation of water revenues when it is separated from local politics.[37] Taking cue from the CPHEEO, many state governments have created such independent boards for water supply in cities. For example, Delhi, Hyderabad, Chennai, and Bangalore are a few of the cities which have such boards supplying water to the city population. The main functions of these boards include augmentation of water supply, operation and maintenance of the distribution system, capital works and collection of water charges. Sometimes these boards such as in Hyderabad give bulk amount of water to the municipal bodies against a fixed charge instead of distributing water themselves to the individual households.[38] In cities where boards do not exist, the responsibility for maintaining the capital assets, and collecting water taxes and charges lies with the urban local bodies or municipalities.

While these institutions are directly involved in water supply to the people, there are also several other departments or agencies indirectly adding to the efforts of government. For example, the Central Water Commission (CWC) in the Ministry of Water Resources (MoWR) has responsibilities for regulating the use of surface water for irrigational, industrial and drinking purposes. The CWC also mediates in inter-state water allocation disputes. The Central Groundwater Board (CGWB) of the same Ministry has an overseeing responsibility to monitor groundwater levels and rates of depletion, as well as production of water resource inventories and maps. The National Rivers Conservation Directorate (NRCD) under the Ministry of Environment and Forests (MoEF) oversees the implementation of Action Plans to improve the quality of the nation's rivers.[39] The Central Pollution Control Board (CPCB) was set up in the Ministry to promote basin-wide pollution control strategies. The CPCB liaises with State Water Pollution Control Boards and lays down standards for treatment of sewage and effluents. The Board is also responsible for action in the case on non-compliance. Other government agencies involved either directly or indirectly with

water supply and sanitation in India include the Ministry of Agriculture (MoA), which is involved in planning, formulation; monitoring and reviewing of various watershed based developmental project activities.

State provisioning of drinking water also sometimes involve non-state actors such as market and civil society organisations.

3.8.1 Supply of drinking water through the market

Water supply to the people sometimes has involved the market mechanisms by the State. For example, the Chennai Water Board has contracted with 500 private contractors to supply to various parts of the city, including slums which do not have public stand posts (PSPs). The tankers in turn buy water from farmers outside the city and supply water to the people. They in turn are reimbursed by the Chennai Water Board. Approximately 10% of the Chennai Water Board's annual expenses go towards hiring and monitoring these tankers. The contract is monitored by the Water Board. The tanker owners attend regular vigilance committee meetings.[40] This is a case of employing market mechanisms by the State to provide water to the people.

3.8.2 Supply of drinking water through the CSOs / VOs

Water supply to the people in cities also sometimes involves the civil society organisations or the voluntary organisations. In such case, the civil society organisations or the voluntary organisations are supplied with bulk amount of water and in turn the CSOs / VOs distribute water to the residents in the area. For example, the Resident Welfare Association (RWA) in a particular colony is given bulk water by the municipality or the water board and in turn, the RWA distribute water to the individual houses. The RWA also takes the responsibility of O & M functions and the collection of user charges from individual houses.

3.9 Drinking water and the five-year plans

Although at the beginning of Five-Year Plans in India it was realized that providing safe drinking water to the people was vital for the development of the country, the plan outlay was not significant. During the Fifth Five-Year Plan, it was realized that no improvement in the standard of the people could be brought about

without providing safe drinking water. From this plan the Minimum Needs Programme (MNP) was introduced and provision of safe drinking water was included in it. During the 8th plan it was implemented in a more decentralized manner with the involvement of people and local institutions and the role of government was restricted to planning, monitoring and partial financial support. During this plan also there was a major policy shift of the government towards water as it declared water to be managed as any other commodity. The striking feature in the 8th plan is the involvement of private sector. Private sector efforts for construction and maintenance of drinking water projects was given go ahead and mobilised to the maximum extent feasible. From this plan onwards, private sector involvement is encouraged and has become a regular feature in five year plans.

Significantly the 9th plan saw the role of the government shifting from that of a service provider to a facilitator in policy framework, institutional capacity building and financial reforms. In the light of the Constitution (74th Amendment) Act, while State agencies may continue to plan and implement capital works, the responsibility of distribution may be progressively decentralised to local bodies, and where feasible, to the private sector, within the policy guidelines of the state governments to strengthen the delivery and management of drinking water. It was also decided that, plan funds would be used not only for direct intervention but also as a leverage instrument. This strategy has to be increasingly adopted to activate and sustain the funds flow from outside the government sector. The percentage share gradually increased from the 1.28% to 1.38% between First to Eighth Plan and then dramatically improved to 2.17% of the total public sector outlay in the Ninth Five Year Plan (see table 3.2).

The Tenth Plan shifted the role of government from direct service delivery to that of planning, policy formulation, monitoring and evaluation, and partial financial support. Further the Eleventh plan, made special emphasis on creating conducive atmosphere to private sector investment in urban infrastructure such as water supply. Therefore, private sector participation in the urban water supply has become the cornerstone of planning strategy since the eighth plan.

Table 3.2: Water supply plan-wise allocation (Rs. in crores)

Plan Period			Total Plan Outlay/Expdr. Under Water Supply & Sanitation Sector		Plan Outlay/Expdr. for Urban Water Supply	
			Amount (Rs. Crores)	% of Public Sector Outlay	Amount	% of Public Sector Outlay
1.	I Plan (1951-56)	Outlay	49.00	1.46	43.00	1.28
		Expenditure	11.00	0.56	8.00	0.41
2.	II Plan (1956-61)	Outlay	72.00	1.07	44.00	0.65
		Expenditure	74.00	1.58	44.00	0.94
3.	III Plan (1961-66)	Outlay	105.70	1.23	89.37	1.04
		Expenditure	110.17	1.28	91.34	1.07
4.	IV Plan (1969-74)	Outlay	437.00	2.75	282.00	1.77
		Expenditure	458.90	2.91	250.90	1.59
5.	V Plan (1974-79)	Outlay	1030.68	2.62	549.44	1.40
		Expenditure	1091.60	2.77	539.51	1.37
6.	VI Plan (1980-85)	Outlay	4047.00	4.15	1766.68	1.81
		Expenditure	3997.78	3.66	2334.53	2.14
7.	VII Plan (1985-90)	Outlay	6522.47	3.62	2965.75	1.65
		Expenditure	7093.13	3.24	2557.81	1.17
8.	VIII Plan (1992-97)	Outlay	16711.03	3.85	5982.28	1.38
		Anti. Expenditure	16932.00	4.33	7316.00	1.87
9.	IX Plan (1997-02)	Outlay	39538.00	4.46	18624.00	2.16
10.	X Plan (2002-07)	Outlay	44206.55	2.89	19758.55	1.30

Source: www.cpheeo.nic.in

There has been a significant increase in the plan allocation in the country's FYP over the years. From the modest plan investment of Rs. 43 crore in the first FYP (1951-56), the allocation increased to Rs. 19758.55 crore in the tenth FYP (2002-07).

However, the plan proportion of urban water supply has been maintained at about 1.2-1.3 percent, notwithstanding the fact that the urban population has risen from 62.4 million in 1951 to 285.31 million in 2001.

Apart from the Five-Year Plans, the government at the national level has from time to time launched various programmes to provide the people with safe drinking water. The programmes are summarised here;

3.10 Water supply programmes: 1954 till date

In accordance with the policy pronouncements and commitment of the government towards providing drinking water to all, several specialised schemes are announced from time to time. A list of such important schemes of government to provide drinking water to the people is given below.

- National Water Supply and Sanitation Programme (NWSSP, 1954)
- Village Water Supply Programme (VWSP),
- Urban Water Supply Programme (UWSP),
- Accelerated Rural Water Supply Programme (ARWSP), 1972-73
- National Programme of Minimum Needs or MNP, 1974-75
- Technology Mission or Rajiv Gandhi National Drinking Water Mission (RGNDWM), 1986
- Accelerated Urban Water Supply Programme (AUWSP), 1993
- Swajaldhara, 2002
- Jawaharlal Nehru National Urban Renewal Mission (JNNURM), 2005

Since it is out of purview of the present work to discuss schemes in rural areas, the present discussion is confined to urban sector only. The schemes to provide drinking water to urban areas are briefly discussed here.

3.10.1 Urban water supply programme (UWSP)

Urban Water Supply Programme like the Village Water Supply Programme (VWSP) was implemented in order to provide drinking water to the urban areas. It was being executed by municipalities and corporations with loans provided by the

Central and state governments. A sum of Rs 89 crores was provided for Urban Water Supply and drainage during the 3rd plan.[41]

3.10.2 Integrated development of small and medium towns (IDSMT)

IDSMT was launched in 1979–80 to improve the economic and physical infrastructure and to provide essential facilities and services in small and medium towns. Till March 2007, a total of 1854 towns, out of 5092 small and medium towns were covered under the scheme. Out of an approved outlay of Rs 1304.65 crore for the Tenth Plan, the anticipated expenditure is Rs 566.43 crore. The scheme has since been subsumed in JNNURM as Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT).[42]

3.10.3 Accelerated urban water supply programme (AUWSP)

During the eighth plan (1992-97), in 1993-94 a new programme was launched for urban drinking water supply. This programme was targeted at small towns with population less than 20,000 in 1991 census, for drinking water supply as they had been excluded or not given due importance earlier.[43] Funding for this programme was envisaged by central and State governments in the ratio of 50:50. In special cases, 100 per cent finance is available as the central share. The AUWSP is being administered through the CPHEEO at the Centre.

The primary objectives of the programme are; to provide safe and adequate water supply facilities to the entire population of these towns within a fixed time frame, to improve the environment and the quality of life and for better socio-economic condition and more productivity to sustain the economy of the Country.

The programme was operationally integrated with the Public Health Engineering Department / Water Supply and Sewerage Board and Urban Local Bodies for the provision of water supply facilities. In so far as the operation and maintenance of assets created under the programme are concerned, the stress was on the community to operate and maintain it. Priority was given to the towns with special problems such as:

- Very low per capita supply
- Very distant or deep water source

- Drought-prone areas
- Excess salinity, fluoride, iron content in the water source
- High incidence of water borne diseases

Evaluation of the programme was made in November 2003 for 62 towns in 24 States. Major recommendations included handing over of the scheme to ULBs, timely release of state funds, periodic review of tariff, and training to field engineers for effective implementation.[44] The scheme has since been subsumed under JNNURM.

3.10.4 Jawaharlal Nehru national urban renewal mission (JNNURM)

The Prime Minister of India launched JNNURM on December 3, 2005 to give focused attention to integrated development of urban infrastructure and services in select 63 cities with emphasis on provision of basic services to the urban poor, including water supply. A provision of Rs 50000 crore has been made as reform-linked Central assistance over the Mission period of seven years beginning from 2005–06. The provision of Central assistance is linked to the implementation of certain mandatory as well as optional reforms at the State and ULB/parastatal levels during the Mission period. Against the allocation of Rs 4900 crore for 2006–07, an amount of Rs 3906 crore was released. In 2007–08, an amount of Rs 5500 crore has been allocated.[45]

3.10.5 Urban infrastructure development scheme for small and medium towns (UIDSSMT)

JNNURM scheme consists of only 63 cities and towns. For the remaining 5098 urban areas, the Urban Infrastructure Development Scheme for Small and Medium Towns has been launched. Under this scheme, the cities and towns proposing to access funds for urban infrastructure improvements such as water supply will have to undertake mandatory as well as optional reforms. Under the scheme, the States are authorized to prioritise cities and projects to be provided assistance. The scheme will be implemented through a State level nodal agency.[46]

3.10.6 Mega city

A programme on infrastructure development in the mega cities was introduced in 1993–94 to cover a wide range of projects on water supply and sewerage, roads and bridges, city transport, solid waste management, etc. The anticipated expenditure of Central share released during Tenth Plan amounts to Rs 908.69 crores against an allocation of Rs 1050 crores. The scheme has since been subsumed in JNNURM.[47]

3.10.7 Urban reform incentive fund (URIF)

The Tenth Plan underlined the need for broad based reforms in urban governance and made it obligatory for assessing Central assistance. One of the reform measures under the URIF was to revise the user charges to cover operations and maintenance costs of water supply. An allocation of Rs 300 crore was made under URIF for allocation to different States for implementing the reform agenda. The scheme was later subsumed in JNNURM.

3.10.8 National urban infrastructure fund (NUIF)

The commercial banks are hesitant to lend to ULBs due to apparent lack of capacity of the ULBs to meet their debt. Therefore the NUIF is proposed to be set up as a trust to provide source of funding for bankable projects/ schemes pertaining to the ULBs. This also includes projects relating to urban water supply at the city level.

An analysis of the programmes and schemes undertaken by the State in India for providing drinking water reveals that the major concern and areas of emphasis have changed significantly during recent years with the changing policy perspectives at the macro level. Most of the programmes for providing basic services in the period following independence were primarily financed by the central government. However, there has been a large scale policy shift in such areas and the responsibility has shifted from the national government to the regional or the local bodies in India.[48] On the other hand, beginning the Eighth Five Year Plan (1992-1997), there has been a major policy shift at the macro level with the emphasis shifting to a greater reliance on private capital, institutional financing and resource mobilisation by the concerned public agencies for provisioning drinking water in urban areas.[49] Thus the policy shifts at the macro level and the changes in the nature of water supply schemes and

pattern of financing for these programmes have affected the availability and accessibility of drinking water to urban population and particularly, the poor.[50]

A sense of urgency was expressed in the planning for water supply with the adoption of United Nations Water Supply and Sanitation Decade (1981-1990) in accordance with the Mar Del Plata declaration in 1977. Accordingly a National Master Plan of India for the water decade was brought out by the Ministry of Works and Housing, Government of India in 1983. The master plan highlighted the sector position in terms of coverage targets, financial requirements, and the need for reforms in planning, implementation, monitoring and O&M of water supply. However it was realised that there was no special efforts made in terms of allocation of resources. Only a few states like Rajasthan, Utter Pradesh and Madhya Pradesh made special allocations for water supply.[51]

In several cases, the state governments have discontinued the programmes owing to lack of funds after the central government stopped funding. Some other state governments have opted for institutional financing at high interest rates rather than budgetary allocations. The result, these states have put more emphasis on cost recovery and hence the pro-poor bias has been diluted in the process. Thus, the weak financial position of the state governments and the local bodies has serious negative implications on the people's access to drinking water. On the other hand, the financial institutions like HUDCO and other international agencies such as the World Bank and the IMF, which finances these schemes at the regional level, insist on cost recovery by increasing water tariffs. Since increasing water tariffs is a politically contentious issue, the implementing agencies find it an uphill task to fulfil and hence can not avail institutional finance. Therefore, cost recovery and financial viability have become the underlining principles in the new changed policy environment. As a result, those projects which are remunerative in the long run take precedence over projects that have long term growth potential for the urban centres and infrastructural facilities. [52]

The urban water sector is characterized by the absence of effective regulation, controls and coordination between the concerned agencies. In India, for instance, there is a multiplicity of public bodies at the federal, state and local level. Some agencies elaborate and define policies while others are limited to an advisory or planning role.[53]

Furthermore, in the entire process of drinking water provisioning, the role of NGOs, civil society organizations and ultimately the community participation is poorly defined. The community members play a very little or no role in the planning and implementation process of different schemes thereby making it partially successful. Supplying potable drinking water has always been a case of centralized planning and all the decisions are taken at the central level. The activity is essentially governmental, centralized, with a top-down approach whereas the need is for a people-centered planning.[54] The beneficiaries of water services, the consumers and members of community are overlooked while plans and projects are being finalized. The urban local bodies which are constitutionally mandated to play the main role in supplying drinking water ends up doing only the execution work with no role in planning and decision-making.[55] It appeared over a period of time that the centralised planning and implementation of water supply did not yield expected results. Hence a more decentralised approach to the implementation of water supply programmes was taken up with the passing of 74th Constitution Amendment Act 1994.

3.11 The constitution 74th amendment act

A new era in the constitutional history in India was ushered in with the 74th Constitution Amendment Act (CAA). The Act gave the urban local bodies (ULBs) a constitutional status with self governing democratic institutions. The CAA has empowered elected representatives and the community leaders with decision making powers through institutional frameworks such as Ward Committees and District Planning Committees. The emphasis was on *bottom-up* approach and the discarding of the *top-down* approach. Through the Act, the ULBs are empowered with the responsibility of water supply to the urban areas. The CAA made specific provisions for decentralization of functions, finances, and functionaries in order to enable the ULBs to function as *institutions of self government.* However in reality, fiscal and administrative decentralization have lagged behind political decentralization.

With the adoption of economic reforms in the early 1990s and the passing of 74th CAA, there is a shift in the way policies on drinking water are adopted. There is now more talk of cost recovery, meeting O & M costs and private participation. This is further fuelled by the donor agencies and their conditionality. The donor agencies

such as the World Bank, the IMF and the Asian development Bank (ADB) conduct several training programmes for the high ranking water officials, bureaucrats and the engineers to infuse in them the idea of cost recovery, charging for water and private participation. While on the one hand these agencies promote such idea as Millennium Development Goals (MDG), on the other, they finance various drinking water projects and put conditionality.

Besides, one can find the importance that is attached to drinking water in different State policies and programmes from time to time. In addition, there is enormous increase in plan expenditure over the years for providing safe drinking water to the people. However, the goal of providing safe drinking water universally has remained ever challenging to the government.

While on the one hand, the State policies endorse drinking water for all, on the other, the same State policies make a distinction and deprive certain section of the people of their basic rights – right to drinking water.

3.12 Impact on access to water

At a macro level the State policies are designed in such a manner as to provide universal access to drinking water to all people irrespective of their class, caste or social status. Since independence it has been seen, in major policy decisions of the government like the Five Year Plans and other programmes for water supply that the basic thrust of the State policy is universal access to safe drinking water for all. Besides, the major policy of the government in order to provide safe drinking water to the poorest of the poor is the highly subsidised water. Government across states have policies for a heavily subsidised water supply. However, access to safe drinking water is still a mirage to millions of people in the country.

These are policies at the macro level. A little digging at the policies at the micro level shows how contradictory these policies are with the end results. There are several entry barriers whereby the poor and people in the lower strata do not have an easy sail to get a municipal water connection or easy access to drinking water supplied by local authorities.

3.12.1 High connection costs

One of the primary reasons which, to a great extent, have determined people's access to drinking water in the urban areas is the charges or fee attached to granting a new water connection. Connection costs, ironically called donation is collected from all new piped water connections. These are as high as Rs 10,000/- to Rs 15,000/- in many Indian cities. For example, in Hyderabad (Andhra Pradesh) it is around Rs 12,000/-. In such a situation, people living in the poorer areas and the poor people cannot afford to pay such a high amount for a new water connection. Consequently, they do not have formal water connection and thus their access to clean drinking water is grossly compromised. Therefore, the problem for the poor in urban areas in accessing water is not one of affordability only but also of the inherent capital expenditure involved in obtaining new water connections.[56]

3.12.2 Land tenure

One of the primary requirements for granting a new water connection is the land tenure. In contrast, most of the people living in the urban slums lack legal land tenure which provides people with official status and documentation to live in their settlement as legal settlers.[57] Therefore, in the absence of legal land tenure in the official records the slum settlers become illegal settlers and hence basic services including water supply cannot be provided to them. Since supplying them with basic services amounts to their being politically and legally recognized as bonafide legal settlers, the State agencies stay away from such a practice, hence depriving the poorer communities' access to safe drinking water.[58] On the other hand, at times these slum settlers are seen as outside the urban periphery and in the process of planning and policy design they are overlooked. Ashis Nandy defines it as "the city that was never part of the formal *master plan* but always implicit in it."[59] This unintended city consists of the growing number of poor housed in slums and streets. Their presence is not counted while different policies and programmes are being implemented and hence they are not entitled to get connected to the water supply system.

3.12.3 Subsidised water for the poor

The most cynical of the State policies is the subsidised water supply. Water supply to urban households in India is highly subsidised.[60] They are aimed at assisting the poorest to have access to water supply. But as has been pointed out earlier, majority of the urban poor do not have access to organised water supply being the illegal settlers and not being able to pay the high connection cost. Therefore, the poor in the urban areas do not get benefit of this subsidised water. Further, it's always the poor who suffer from not having access to water.

On the other hand, these subsidies intended for the poor benefit the rich class people having water connections to the main supply lines. Furthermore, raising water tariffs which rests with the political executives is highly politically unpopular and contentious issue. Besides, this increased tariff affects only the legally connected users and illegal connections are untouched.[61] Therefore, in the name of poor it is actually the rich who are perpetuating the benefits of subsidised water and yet the poor do not get access to municipal water and depends on other private sources, at times highly contaminated. Therefore, the subsidies provided through the public agencies for basic service delivery in urban areas justified in the name of poor are cornered by richer sections that have the ability to pay.[62]

3.12.4 Private provisioning of drinking water

In the face of wide spread disparities in water supply, inefficiency in the system, increasing water loss, inefficient water use and the widely *perceived* scarcity of water, with increased financial burden on the State agencies, the policy makers and planners have found an easy way out in the form of private provisioning.[63] It was declared that water has to be managed as a commodity as any other resources, which was a major shift from earlier plans. Further, private sector efforts for construction and maintenance of drinking water projects were encouraged since the Eighth Plan. In the Tenth Plan (2002-2007) it was further stressed that, water supply to consumers would normally be demand based rather than supply based which the consumers are willing to maintain, operate and finance. This indicates that those having purchasing capacity will have easy

access to drinking water and it's a dream for the people having no purchasing capacity.

The privatization of water sector in India has taken place in two ways. First, the outright privatization of water supply by management contracts. The second that is more insidious and have a far-reaching impact is through the water sector reforms. These policies were pushed by the donor agencies with an underlying objective of converting potable drinking water from a fundamental right to a mere commodity which cannot be claimed but can be bought or sold in the market. Thus, privatising water sector or private provisioning of drinking water has put a big question mark on the sustainability and most importantly the social justice and equity aspect.[64]

3.12.5 Low quality water / pollution

Pollution of both surface and underground water has emerged to be one of the major concerns among the policy makers in India. Among others the major area of worry is the pollution of water at the source level. Due to rapid urbanisation, industrilisation and increased usage of fertilizers, quality of water has decreased considerably. There is also problem of fluorosis and salinity in water making it inconsumable for the people.

Moreover, all urban centres in India have intermittent water supply i.e. few hours a day. In this scenario, the supply pipeline is empty for the rest of the time and due to back siphoning pressure, contaminated water and waste water enter the supply line. Eventually when water is supplied next, these contaminants are delivered to the people resulting in contaminated water and subsequent water borne diseases. On the other hand, for a healthy society, it is imperative that the entire population has assured sources of safe drinking water. The burden of population getting contaminated water is reflected in the health expenditure of the country.

3.12.6 Water loss or unaccounted for water (UFW)

Water supply infrastructure in many Indian cities is age old and maintained poorly. This amounts to linking pipelines and high transmission losses. In addition

to this, there is water theft and unauthorized water connections which altogether amounts to a high level of unaccounted for water. For instance, unaccounted for water in Delhi amounts to around 50 per cent of the total water pumped into the system, whereas it is around 35 to 40 per cent in the case of Hyderabad and Bangalore.[65] Nobody accounts for that amount of water and consequently the quantity of water supplied to the people is decreased and supply to the poorer areas is overlooked.

One can make out now that all is not well with the urban water supply and consequent people's access to water. While on the one hand, the State policies advocate water for all, on the other, when water is actually delivered to the people it makes a distinction. In the final analysis, it is actually the poorer sections who are the worst sufferers of such policies, denying them their basic right to water. Therefore, the present policy framework for urban water supply appears to be less *inclusive*[66] and segregates people in terms of economic capacity. The techno-managerial, bureaucratic approach to urban drinking water supply has segregated the people in terms of their assumed economic status. Thus, disadvantaged groups in India are systematically excluded from using public goods such as water by social processes of discrimination.[67] The most polarised and the vast majority who do not have personal connections with a powerful patron are left out in the process. Further, the engineering-dominated supply side approach meant that the attention was focussed on water resource development and the manner in which water was used or managed received little attention. This approach also found its manifestation in the inter-linking of rivers project. The major rivers in India are supposed to be interlinked and water supplied to the water stressed area. However, there is vehement opposition to it from environmentalists on grounds of destroying the ecological balance. Therefore, it appears to be a policy inadequacy on the part of the government, which stresses more on the new projects rather than efficiently managing the existing ones. The government is rather more interested in finding distant new sources rather than regulating and properly managing the existing ones such as the nearby tanks and rivers and their catchment areas.

The protection and enforcement of the right to water in India makes it apparently clear that having an enabling legal regime is by itself not sufficient to realise that objective. The policies of the State that are progressively inconsistent with the constitutional recognition of the right to water require to be continuously interrogated and challenged Although there is in India a fairly developed body of case law that recognizes the right to water and the need for the State to preserve and protect that right, there are a number of barriers that require to be overcome before the effective and equal access to water to every citizen is made a reality. The recently enacted Maharashtra Water Resources Regulatory Act 2005 places restriction on the availability of affordable water by linking the payment for water to the size of the family. S.12 (11) of this law states: "Notwithstanding anything contained in this Act, a person having more than two children shall be required to pay one and a half times the normal rates of water charges fixed…"[68] That a basic right should be purchasable denies the right to any person without purchasing power. This is a direct denial of the basic right to water by the statute.

At the community level, there is a conflict between the States on the one hand and the village level administrative bodies on the other over the control of water sources. Such conflicts have given rise to serious concern that the constitutional scheme of decentralization of power over water sources may in fact be rendered unworkable by the States. The tensions over control and contestation pose a serious challenge to decentralization of water governance structures.[69]

In addition, most of the urban services have been monopolised by a large section of urban middle class, who gained from the New Economic Policy, thereby depriving large sections of poor. The inadequacy of water supply by urban authorities has led to a boom in bottled water across the country in the name of mineral water.

The present chapter examined the role of the State in water provisioning to the people in urban areas. It is observed that there have been shifts in the role of the State and its policies over a period of time from that of a service provider to that of a facilitator. The shift in State policy had far reaching consequences for people's access to drinking water. While more stress is on the cost recovery approach, the State has particularly found it difficult to finance the water supply projects and hence funds from the market are seen as the viable option. In the new policy environment, the role

of private sector is emphasised. The next chapter deals with the role of market and civil society organisations in water provisioning to the people.

[1] The principal objectives of the Indian planning at that time included bridging the gap in income inequality through employment generation, increases in national income through rapid industrialisation and thus the emphasis was on heavy industry and a central role for the public sector. Towards this end, at the beginning of second Five Year Plan, the Industrial Policy Resolution was formulated in 1956 which more or less spelt out the goals of planning as stated above. I. J, Ahluwalia, "Contribution of Planning to Indian Industrialisation", in T J Byres (Ed.), *The State and Developing Planning in India,* Oxford University Press, New Delhi, 1993, pp.347-90.

[2] This type of an assertion by the Indian State has sometimes been criticized by the Marxist political economists such as Byres (1993). In his article, Byres argued that the nature of the post-colonial State is to create the condition for a successful, transforming capitalist development and thus, the State is only an instrument towards a capitalistic development (T. J, Byres, "State, Class and Development Planning in India", in T J Byres (Ed.), *The State and Developing Planning in India,* Oxford University Press, New Delhi, 1993, p.10). This was obvious from the formulation of Bombay Plan of 1944 which primarily was conceived by eight eminent industrialists. However, contrary to this, Rudolph and Rudolph (Lloyd Rudolf and Susanne Rudolf, *In Pursuit of Laxmi: the Political Economy of the Indian State,* Oxford University Press, London, 1987) argued that the creation of a large public sector is itself the evidence for socialism and a socialist State in India.

[3] Abhijit Banerjee and Rohini Somanathan, "The Political Economy of Public Goods: Some Evidence from India", *Journal of Development Economics,* Vol- 82, 2007, p. 288.

[4] Indira Gandhi made the removal of poverty *(Garibi Hatao)*, the cornerstone of her successful election campaign in 1971 and it became increasingly common for election campaigns to be fought on the basis of who would deliver the (public) goods. The national elections of 2004 saw a marked anti-incumbency wave and the post-election survey by Center for the Study of Developing Societies found widespread dissatisfaction of the electorate with basic infrastructural facilities. Ibid, p. 293.

[5] The term *Washington Consensus* was originally coined by John Williamson and refers to the widespread view among the policy makers, particularly in the circles of IMF, the World Bank and other bilateral donor agencies that a more liberal economic model was desirable. The key elements of the Washington Consensus besides the above mentioned are; fiscal discipline, reorienting of public expenditures, tax reforms, financial liberalization, trade liberalization, openness to foreign direct investment and secure property rights. For details see, John Williamson, "Democracy and Washington Consensus", *World Development,* Vol- 21, No- 8, 1993, p. 1332.

[6] Meena Panickar, "State Responsibility in the Drinking Water Sector; an Overview of the Indian Scenario", *IELRC Working Paper – 06,* 2007, p. 6.

[7] The Constitution of India while distributing the legislative powers between the centre and the states clearly enumerates the areas where they can have exclusive power to make laws and where they both can co-exist. The areas or items are defined in the Seventh Schedule of the Constitution in three lists. List-I, i.e. Union List has 97 items where the Union of India or as is referred to as the central government has exclusive jurisdiction to make laws, List-II, i.e. the State List has 66 items where the federating units or as is referred to as the states in India has exclusive jurisdiction to make laws in normal situations, and the List-III, i.e. the Concurrent List has 47 items where both the central government or the government of the states can make laws. But in case of conflict, the union government shall prevail.

[8] The Article 246(3) of the Constitution states, subject to clauses (1) and (2) of Article 246, the legislature of any state, has exclusive power to make laws for such state or any part thereof with respect

to any of the matters enumerated in List II in the Seventh Schedule (in this constitution referred to as the "state list").

[9] S Muralidhar, "The Right to Water: an Overview of the Indian Legal Regime", *IELRC Working Paper,* Geneva, Switzerland, 2006. Available online at http://www.ielrc.org/content/a0604.pdf

[10] The legislatures of the different states have sought to enact a large number of statutes that touch upon the various aspects of the control, regulation and distribution of water. Thus, we have an elaborate network of laws relating to canals and irrigation (The Northern India Canal and Draining Act, 1873, The Bombay Irrigation Act, 1879, Karnataka Irrigation Act, 1965, The Rajasthan Irrigation and Drainage Act, 1954), use of water sources [The Kumaon and Garhwal Water (Collection, Retention and Distribution) Act, 1975], water sewerage and drainage (The Utter Pradesh Water Supply and Sewerage Act, 1975), and ground water (Madras Metropolitan Area Ground Water (Regulation) Act, 1987, Kerala Ground Water (Control and Regulation) Act, 2002, Karnataka Ground Water (Protection and Regulation for Drinking Water) Act, 2003 are some illustrations. The aspects of collection of taxes and cesses on the use of water are also covered by legislations enacted by both Parliament as well as State legislatures (The Water (Prevention and Control of Pollution) Cess Act, 1977).

[11] Entry 6 in the State List reads: 'public health and sanitation; hospitals and dispensaries.' Entry 17 reads: 'water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power subject to the provisions of Entry 56 of List I.

[12] Chhatrapati Singh, *Water Rights and Principles of Water Resource Management,* Indian Law Institute, New Delhi, 1991, p. 15.

[13] Usha Ramanathan, "Legislating for Water: the Indian Context", *IELRC Working Paper,* Geneva, Switzerland, 1992. Available online at http://www.ielrc.org/content/w9201.pdf

[14] There has emerged a huge number of literature in recent times on irrigation management during the colonial times. Most of the literature identifies revenue as the basic rationale behind the overwhelming interest the colonial rulers attached to irrigation. It was also identified as the important means to control larger section of the society. More on this can be found in David Mosse, *The Rule of Water: Statecraft, Ecology, and Collective Action in South India*, Oxford University Publications, New Delhi, 2003, pp.25-73.

[15] Indian Easement Act of 1882 confers the sole right of ownership of water to the land owner. Under the Act, 'land' also includes all things permanently attached to the earth. In the Land Acquisition Act of 1894 also, 'land' has a similar expression.

[16] *Manual on Water Supply and Treatment,* CPHEEO, Ministry of Urban Development, New Delhi, 1999, pp. 526-31.

[17] Op cit, No- 6, p. 2.

[18] Op cit, No- 6, p. 5.

[19] This is evident from the observation by the court in numerous cases such as, *Delhi Water Supply & Sewage Undertaking and Another* vs. *State of Haryana and Others* (1996) 2 SCC 572. In *F K Hussain* vs. *Union of India* AIR 1990 Ker. 321and *Attakoya Thangal* vs. Union of India (1990)1KLT 550, the Kerala High Court held the right as part of Article 21. *See also Subhash Kumar* vs. *State of Bihar* AIR 1991 SC 420; *M C Mehta* vs. *Kamal Nath* (1997)1 SCC 388; *AP Pollution Control Board* vs. *M V Naidu and Others* (1999) 2 SCC 718; *State of Karnataka* vs. *State of Andhra Pradesh* 2000 (3) SCALE 505. Op cit, No-6, p.5.

[20] For further details please see, Vishwa Ballabh, "*Governance Issues in Water Sector*", accessed from internet on 02.01.2008, http://www.irma.ac.in/silver/themepaper/BALLABH.pdf

[21] *Francis Coralie Mullin v. The Administrator, Union Territory of Delhi* 1981 (2) SCR 516.

[22] For an important decision regarding closure of a hotel resort which was polluting the Beas river in Himachal Pradesh, see *M.C. Mehta v. Kamal Nath* (1997) 1 SCC 388.

[23] *Narmada Bachao Andolan v. Union of India* (2000) 10 SCC 664 at 767.

[24] Syed Masood, "Article 21 and right to pollution free environment: a human right approach", *Central India Law Quarterly,* 2001, p. 56.
[25] AIR SC 1996 (2) SCC 549 at para 4 cited in Syed Masood, 2001, p. 59.
[26] *A.P. Pollution Control Board (II) v. Prof. M.V. Nayudu* (2001) 2 SCC 62 at 79. More recently, the Supreme Court declared as illegal the action of the Government of Karnataka excluding the land brought under mining by the Kudremukh Iron Ore Company Ltd. excluded from the purview of notification issued under s.35 (1) of the Wildlife (Protection) Act 1972 declaring the Kudremukh National Park to be a national park: *T.N. Godavarman Tirumalpad v. Union of India* (2002) 8 SCALE 204.
[27] Op cit, No. 16, p. 10.
[28] Ramaswamy R. Iyer, *Water: Perspectives, Issues and Concerns,* Sage Publications, New Delhi, 2003, p. 55.
[29] Ibid, p.56.
[30] National Water Policy 2002, Ministry of water resources, Government of India, New Delhi, 2002.
[31] Joel Ruet, V S Saravanan and Marie-Helene Zerah, "The Water and Sanitation Scenario in Indian Metropolitan Cities: Resources and Management in Delhi, Calcutta, Chennai, Mumbai", *CHS Occasional Paper No-6,* French Research Institutes in India, New Delhi, 2002, p. 4.
[32] Ibid, pp.4-5.
[33] *India Assessment 2002: Water Supply and Sanitation,* Planning Commission, Government of India, 2002, p. 18.
[34] Sometimes these Acts are criticised on the grounds of merely supporting and promoting large scale multi-purpose projects and in strengthening State control of water resources.
[35] The 74th Constitution Amendment Act, 1994 gave the urban local bodies constitutional status in India.
[36] Op cit, No. 16, p. 521.
[37] Op cit, No. 16, p. 521.
[38]Hyderabad Metropolitan Water Supply & Sewerage Board (HMWS&SB), www.hyderabadwater.gov.in
[39] Previously their activities were confined to the Ganga Action Plan, but now extend to the polluted stretches of 27 major rivers with works spread over 149 towns in 16 states.
[40] David McKenzie and Isha Ray, "Household Water Delivery Options in Urban and Rural India", Paper prepared for the 5th Stanford Conference on Indian Economic Development, June 3-5, 2004.
[41] Third Five Year Plan, Planning Commission, Government of India, 1961-66, p. 347.
[42] Eleventh Five Year Plan, Planning Commission, Government of India, 2007-12, Vol-III, p. 402.
[43] Ninth Five Year Plan, Planning Commission, Government of India, 1997-02, Vol-II, P. 265.
[44] Op cit, No. 42, p. 397.
[45] Op cit, No. 42, p. 398.
[46] Op cit, No. 16.
[47] Op cit, No. 42, p. 401.
[48] Amitabh Kundu, "Access of Urban Poor to Housing and Basic Amenities; Issues Concerning Vulnerability, Social Security and Governance", Seminar Paper on Social Security in India, Institute of Human Development, April 15-17, 1999.
[49] Eighth Five Year Plan, Planning Commission, Government of India, 1992-1997.
[50] Op cit, no. 48.
[51] Op cit, No. 48.
[52] Op cit, No. 48.
[53] Marie Llorente and Marie Helene Zerah, "The Urban Water Sector: Formal Versus Informal Suppliers in India", *Urban India*, Vol- xxii, No- 1, January-June, 2003. Available online at http://www.cerna.ensmp.fr/Documents/MHZ-UrbanIndia-2003.pdf

[54] Ramaswamy R Iyer, "Water: Towards a Transformation A Critique and a Declaration", *Occasional Paper No. 10,* CPR Occasional Paper Series, Centre for Policy Research, New Delhi, 2004.

[55] *Drinking Water and Sanitation Status in India: Coverage, Financing and Emerging Concerns,* Water Aid India, New Delhi, 2005, p.1.
[56] Op cit, No. 48.
[57] Belinda Calaguas and Virginia Roaf, "Access to Water and Sanitation by the Urban Poor", paper presented at the Development Studies Association Conference, Manchester, 10 September 2001.

[58] Ibid.
[59] Ashis Nandy, "Introduction: Indian Popular Cinema as the Slum's Eye View of Politics" in Ashis Nandy, (Ed.), *The Secret Politics of Our Desires: Innocence, Culpability and Indian Popular Cinema,* Oxford University Press, Delhi, 1998, p. 2.
[60] Christine Sijbesma and M P van Dijk, (Ed.), *Water and Sanitation: Institutional Challenges in India,* Manohar, New Delhi, 2006.
[61] Ibid.
[62] Op cit, No. 48.
[63] It was basically during the Eighth Five Year Plan (1992-97), that the role of private sector was strongly promoted in the water sector as part of the reform programmes. The same trend continued with the National Water Policy 2002, and subsequently different state governments' water policies.
[64] Op cit, No. 28.
[65] Government of India, City Development Plans, JNNURM, Ministry of Urban Development.
[66] Inclusive is synonymous with equitable. For a detailed analysis on *inclusive growth,* please see Mahendra S. Dev's, *Inclusive Growth in India: Agriculture, Poverty and Human Development,* Oxford University Press, New Delhi, 2008, p. 2.
[67] Philip Keefer and Stuti Khemani, "Democracy, Public Expenditures and the Poor: Understanding Political Incentives for Providing Public Services", *The World Bank Research Observer,* Vol-20, No-1, 2005.
[68] The Maharashtra Water Resources Regulatory Authority Act 2005, *Law, Environment and Development Journal,* 2005, p. 80-97, available at http://www.lead-journal.org/content/05080.pdf
[69] Op cit, No. 9.

Chapter – 4

Provisioning for Drinking Water- Involvement of Private Sector and Civil Society Organisations: Some Cases

Chapter three discussed the shifts in the role of the State and its policies while provisioning for drinking water to the people. From a service provider the role of State has shifted to a facilitator. In the emerging scenario, the role of private sector is emphasised in terms of finance and service efficiency. The present chapter deals with the involvement of private sector and the civil society organisations in water provisioning to the people. The chapter is divided into two sections. The primary thrust in the first section is the involvement of private sector in the water service delivery on the face a shrinking State for social welfare services. It analyses the debates on the neoliberal context which prescribed for a smaller State eventually leading to privatisation debate of social welfare services such as water supply. The second deals with the important role played by the civil society organisations in ensuring people's access to drinking water. Taking example from few cases it shows how civic movements at times have prevented commercial exploitation of water.

The State-centric model of development, it appeared could not yield the desired results with a centralized planning and development. It gave a wide scope for the nexus between the industrial elites, the politicians and the bureaucracy which had increased considerably giving a big space for unfair means to misutilize the resources. Through permits and licences, businessmen, politicians and the bureaucrats are drawn close to each other. The businessmen wanted a licence; politician is the granting authority and the civil servant has to process the case favouring business. In effect, this network of the politicians, bureaucracy and industrial elites seem to have taken control of State-centric model of development.[1]

Consequently, a number of reform measures are initiated to cut down the role of State. Therefore, a policy shift was from the omnipotent role of the State to that of a facilitator. The period 1991-92 is cited as turning point for Indian economy as the

acceptance of Structural Adjustment Programme (SAP) meant policies for de-regulation, liberalization, and privatization. In effect many changes are seen in the ways urban areas are governed, which impacted people's access to drinking water.

While the process of private sector participation in power sector began in early 1990's, pace was little slow in the water sector which could gain momentum in course of time. Following the structural adjustment programmes in India since 1991, the eighth five year plan (1992-97) made a significant departure from the past in water sector and the approach towards water management is of course marked by shift to private provider. The water supply manual of Central Public Health Engineering and Environmental Organisation[2] (CPHEEO) bears it out.

> "No doubt water is still the free gift of nature but it is so in *as it is where it is* condition. When it is desired that water, as it is available in nature, should be made safe for drinking and be transported to the points of consumption, it becomes a *commodity* i.e it acquires economic value. A water works must therefore be treated as *an industry* and be built and operated as a *commercial enterprise, with professional approach* where the aim is not only to meet the debt servicing and operational costs, but also to earn a fair return on the investments made, so that future expansion of the water works can be financed at least partly and the undertaking can attract funding from outside sources. It is in this context that the financing of water works, water pricing policy, and overall financial management of water supply undertakings have been receiving serious attention of the planners and administrators and national and state levels."[3]

Cost recovery has become a principle for considering investments in the drinking water sector. Subsequently it facilitated the private sector participation in water delivery. Private sector involvement in water sector impacted different sections of people differently. In the Indian social structure while water is easy resource to some for some it is a scarce. The social construction of power structure has made water artificially scarce for one section of the society. While the elite group of politically powerful, socially dominant and economically rich have accumulated the primary access to water, what is left is made available to the majority people. While a small group controls the larger part of the resource, the majority is left out of distribution. It became a competitive resource. The gap got accentuated with the neo-liberal policies of the State.

4.1 The neo-liberal context

The emerging neo-liberalist tradition in the West especially during the period of Ronald Reagan in the US and Margaret Thatcher in England and subsequently in the circles of the World Bank, the International Monetary Fund (IMF), and other donor agencies advocated individual's economic and political freedom. By implication it was against State's imposition and limitations on the rights of the individuals in all respects. It restricted the functions of State to maintenance of law and order, essentially the character of a police State.[4] The neo-liberalists who were at the dominant circles of the World Bank and the IMF and other donor agencies influenced policy to move forward from promoting economic liberalization to make good governance a condition for development assistance.[5] In the water sector also the IMF and the World Bank had made privatisation a condition for water project loans. For example, out of the 276 loans that the World Bank granted for water projects between 1990 and 2002, 84 directly intended to encourage privatisation.[6]

In the wake of the neo-liberal wave that swept the world in the late 1980's, the private sector was regarded as the most effective means of supplying water to people as it could afford to provide the necessary capital. The distribution of drinking water became a major industry, delivered by private global companies. The 1992 Dublin conference is a breakthrough for market solutions to the water crisis around the world. The conference declaration suggested that if water is free, people do not regard it as valuable, and so waste it. The conference declared, "Water has an economic value in all its competing uses and should be recognized as an economic good."[7] Further it stated in the declaration that, it is vital to recognise the *basic right* of all human beings to have access to clean water at an *affordable price.* The wasteful and environmentally damaging use of water resource was due to the inability to recognise the economic value of water. Therefore managing water as an economic good is an important way of achieving efficiency and equitable distribution. Such assertion gave wide scope for the neo-liberal policy makers to argue in favour of pricing water to recover costs. Operation and Maintenance (O&M) costs should therefore be covered by the payments made by 'consumers' and not by State subsidies. Along with this

goes the advocacy of privatization of water services. This approach is strongly advocated by International Financial Institutions (IFIs).[8]

4.2 The privatisation debate

The recent debates on privatisation of resources such as drinking water emphasised the advantages it brings through market allocation and private ownership vis-a-vis bureaucratic control and allocation. The debate around water privatisation is part of the prevailing economic philosophy. In case of consumer or industrial goods such as soap, steel, fertilizer, machinery, the argument is that it is not the business of the State to produce or market these things and that they should be left to the market forces (subject to regulation). If there are State-owned enterprises producing these goods they should be privatized, and their ownership transferred to private hands. By analogy, the same argument is extended to water.[9] There appears to be a consensus among the administrators, and several independent researchers who argue that ensuring efficiency and accountability in the functioning of public service delivery agencies and bringing in private participation alone is an answer for the present crisis in the water front.[10] This is strengthened by the World Bank's claims that the private sector participation (PSP) may lead to improvements in water supply, provide additional management skills and improve management incentives. Government agencies infact can concentrate on policy decisions.[11]

From the late 1980s' onwards, local authorities are expected to provide people with good quality and quantity water have to cope with cuts in fiscal transfer from national and state governments. When the municipalities failed to supply water to the people, private sector participation is seen as the solution. The private sector is expected to provide new capital, and extend services to all. Therefore liberalisation in this sector led to new approaches to water supply. The shift is while earlier getting water supply was a need, contemporary challenges is ability to pay for the water we consume.[12]

It was further stressed that, water supply to people would normally be demand based rather than supply based which the people willing to maintain, operate and finance. This indicates that those having purchasing capacity will have easy access to

drinking water and it's a dream for the people having no purchasing capacity. The features of privatization are also reflected in the National Water Policy-2002, which encouraged private sector participation in planning, development and management of water projects. The management, operations and financing the water supply, which is traditionally seen as a primary responsibility of the government, is termed as the *old view*. And consequently, a *new view* emerged, on policies for water resource supply on an efficient, equitable and sustainable basis, where water is primarily treated as having an economic value.[13]

There are many different ways to promote equity, efficiency and sustainability in the water sector. The protagonists of privatisation argue that pricing water can help maintain the sustainability of the resource itself. When the price of water reflects its true cost, the resource will be put to its most valuable uses. Therefore, perhaps the best way to utilize water is to put a price on water, and construct appropriate tariff structures to meet different social, political and economic goals in different situations.[14] However, since government cannot go for full privatisation for various reasons, roping in the private sector as a partner has become easier.

4.3 Private sector participation

The process of privatization of water sector in India can be witnessed through two ways. Outright privatization of water systems by management contracts, (where the private companies became owners of the entire water supply infrastructure). And secondly through the water sector reforms which are prominently in the form of private sector participation in different aspects of water supply such as distribution, metering, bill collection, plucking leakages etc.

The Working Group on Public-Private-Partnership (PPP), with representations from select Ministries and the Planning Commission, was first set up in the Prime Minister's Office (PMO) in January 2002. Subsequently, the Committee of Secretaries (COS) in its meeting held on September 9, 2003 under the chairmanship of the Cabinet Secretary, decided to constitute two Sub-Groups, namely (a) PPP Sub-Group on Social Sector, and (b) PPP Sub-Group on Infrastructure under the chairmanship of Secretary, Planning Commission.[15] In accordance with the report of

the Working Group on Social Sector, the Ministry of Urban Development circulated guidelines for Sector Reform and Public-Private-Partnership to all states for improving urban water supply through securing private sector participation.

4.3.1 Forms of PPP in urban water sector

Under a PPP regime, generally government enters into a contract with the private parties. The guidelines of the Ministry of Urban Development include model contracts developed by the Government of India. In the Indian context broadly, they are classified under three heads, (i) service contract (ii) management (operations and maintenance) contract and (iii) capital projects, with operations and maintenance contract.[16] Therefore, PPP can take a variety of forms where both the private and the public sector share responsibilities while simultaneously taking the risks (see table 4.1). In all kinds of contracts under a PPP regime, the ownership of asset mostly remains with the public sector while other aspects like investment, infrastructure building, operation and maintenance (O&M) and other service delivery related functions are contracted out to the private sector.

Table 4.1: Different forms of public-private partnerships

Sl No	Form of contract	
1	Service contracts	Management support Operation & management
2	Management contracts	Lease Concession
3	Capital Projects contracts	Build-Develop-Operate (BDO) Build Operate Transfer (BOT) Build Own Operate (BOO)

Source: Thomsen (2005)

The above table (table 4.1) outlines the three model contracts developed by the Government of India. Under each contracts there are different components. In a *management contract,* the responsibility for operation and maintenance (O&M) of the water delivery is transferred to the private party, while the public sector retains the responsibility for capital investment and expansion of the system.[17] In a *lease contract,* the private party collects the tariffs, pays a lease fee and retains the surplus amount. However, the responsibility for financing investment and building new

infrastructures remains with the public sector.[18] In a *concession contract,* the private player manages the entire water utility and makes investments in maintenance and expansion of the system, while the ownership of assets is retained with the public sector. Normally, such contracts run for longer period such as thirty to forty years. The case of Buenos Aires in Argentina and Nelspruit in South Africa are instances of such contracts.[19]

The other types of engaging the private sectors under PPP for water delivery are build operate transfer (BOT) contract. In such cases, ownership remains with the public sector and the private party is given the responsibility of designing, financing, and managing the facility over a period of time as agreed upon so as to allow the private firm to recover the costs it incurred. The build own operate (BOO) contract gives the private sector the ownership right while simultaneously operating the system.[20] In India in terms of main types of PPP contracts, almost all contracts have been of the BOT/BOOT type or its close variants.[21]

The funding pattern for PPP projects also differs in different contexts. While in some cases there is public funding with private service delivery and management in some other, funding is public as well as private but service deliver and management rests with the private sector. In another instance though there is funding from both public and private, the management and service delivery also is shared by both under a joint management. Finally in another case, there is private funding with private service delivery and management.

4.4 Some PPP cases in India in water sector

4.4.1 Tirupur, Tamil Nadu

The public private partnership in Tirupur shows, when there is demand from commercial establishments the water needs of the common people is overlooked. Tirupur municipality near Coimbatore in Tamil Nadu awarded a 30 years concessions contract to built-own-operate and transfers the water supply system. The project was conceived in the mid-1990s through the efforts of Tirupur Exporters Association to improve the area's infrastructure to remain competitive in the knitwear industry. Accordingly New Tirupur Area Development Corporation Limited (NTADCL) was

formed as a company to implement the project. The first phase of the project was completed and commissioned in 2005. The services include: (1) Bulk water supply to industries in and around Tirupur town, (2) Domestic water supply to Tirupur municipality and enroute/wayside villages, (3) Domestic sewerage system for Tirupur municipality. The PPP in Tirupur was primarily conceived and developed to supply water to the knitwear industries in Tirupur. Even though under the agreement, the company is supposed to supply bulk water to the Tirupur municipality, however a large section of the poor in Tirupur buy water for their basic needs, through a tanker or from those who have a piped water supply. In addition, the timing for supply of water is erratic in slum areas making access to water difficult for sections of the people.[22]

4.4.2 Bangalore operation and management

In September 2000, the Bangalore Water Supply and Sewerage Board (BWSSB) signed agreements with Vivendi Water and Northumbrian Water Group (NWG), a subsidiary of Suez Lyonnaise des Eaux towards operating India's first delegated water management. It was proposed that each company would be given a 5 year contract for a city zone, each of population 1 million. In their pilot zone, each company would be responsible for all of the services of the Board, including water supply and waste water management, revenue improvement measures, billing and collection, and customer relations. The companies were expected to reduce leakage and improve distribution, and it was suggested that successful completion of the pilots would lead to 25-year contracts. However, political opposition and allegations of corruption in the awarding of the contracts resulted in uncertainty over the project. Northumbrian Water, which changed its name to Ondeo Water services, exited in January 2003, citing political instability and uncertainty as reasons for its withdrawal.[23]

4.4.3 Leak reduction in Bangalore

An example of contracting out services to the private sector can be seen in a pilot project from June 2003 in Bangalore. Larsen and Toubro (L&T) and Thames Water-UK in a 70:30 joint venture received a Rs. 500 million contract from the Bangalore Water Supply and Sewerage Board (BWSSB) for a project designed to

reduce leakage and unaccounted water through district metering,[24] replacing consumer meters, and re-laying of supply lines. The project is funded by the Japan Bank for International Cooperation (JBIC). Competitive bidding is used to select a contractor for a pilot area of 35,000 house water connections. In 18 months the two companies have to cut unaccounted for water for these connections from 31 percent to under 15 percent, and then operate and maintain the area for 18 more months, at which stage the BWSSB will take over management. On successful completion of the pilot project, the BWSSB proposed a global tender to expand the project to cover 400,000 household connections.[25]

4.4.4 The Sonia-Vihar water treatment plant in Delhi

In 2001, after an international call for tenders, the Delhi *Jal* Board (DJB) (the Delhi Government water supply department) awarded a 10-year Build-Operate-Transfer (BOT) contract to Ondeo Degrémont, a subsidiary of the French company Suez Lyonnaise des Eaux. The contract covered the construction and maintenance of a 635 million litres per day water treatment plant, intended to supply 3 million Delhi residents with drinking water, at a cost of Rs 1.8 billion (approximately 50 million dollars). The plant itself has been completed and is now waiting for the water supply to reach the plant. It was scheduled to become operational in June 2004.[26] Water for the plant was supposed to be supplied from the upper Ganga canal of the Tehri Dam project, treated in the plant, and then distributed by the DJB.

The *Bharatiya Janata* Party (BJP), Delhi unit, however stated that the project was a government plan to privatise water in Delhi through the backdoor, and would result in huge price increases once privatization was completed.[27] These claims were denied by the Delhi *Jal* Board. However absence of information on the contract is not giving scope to the researcher.

In several other cases such as in Maharashtra, four cities- Pune, Nagpur, Sangli and Thane involved private sector in different aspects of water supply like; distribution, billing and collection, water treatment, conducting repairs, upgradation of infrastructure and O&M. In Hyderabad, Andhra Pradesh, the Hyderabad Metropolitan Water Supply and Sewerage Board (HMWS&SB) has leased out (in

some areas) certain responsibilities like, installation of water meters, bill collection, etc. to the private sector. However, the issue of concern is the prescription of HMWS&SB to make use of a specific company's meter which the HMWS&SB says is very effective. On the other hand, the users in the city says those meter are hyper sensitive and even works if air passes. In such situation one wonder, what is the interest of a water board to prescribe a certain brand of water meter to the users?[28]

PPP model has increasingly being used in India in the present context to meet the new challenges to water management. As compared to other countries, the rationale for PPPs in India is seen as a source of investment. Besides these cases, following are some instances which show the increasing popularity of PPP model for drinking water delivery in India (see table 4.2 and 4.3 for more details).

Table 4.2: PPP experiences in India

Sl No	City	Type of Contract	Expected Performance Improvement	Progress
1	Gulbarga, Belgaum and Hubli-Dharwad (Karnataka)	Management Contract (4 yr) in a demonstration zone	Continuous water supply, NRW reduction, increase in customer connections, improvement in billing efficiency	Contract awarded and work in progress
2	Jamshedpur	Management contract (3 yr)	Continuous water supply on pilot areas Operational efficiency improvement 100 % coverage by 2007 Revenue improvement Customer service	Operations commenced
3	Alandur (Tamil Nadu)	BOT contract (14 yr)	Setting up STP, pumping stations and network	Construction completed operations ongoing successfully mobilized upfront connection cost full cost recovery through tariffs

Source: Information collected from the respective municipalities or corporations and news paper reports.

Table 4.3: PPP attempts in water sector in Indian cities

	City	Nature PPP	Status
1.	Hyderabad	BOT for Krishna Bulk Water Supply	Initiated in 1995 Abandoned
2.	Cochin	Industrial water supply project (Pre-feasibility conducted in 1996)	Bidding process was not initiated
3.	Bangalore	BOT Project for Cauvery Bulk Water Supply. ROT (Rehabilitation-Operate-Transfer) of existing system	Initiated in 1997 and abandoned
4.	Chennai	BOT Project for Water Treatment Plant.	Initiated in 1997 and abandoned
5.	Goa	BOT for source development and water treatment plant	Initiated in 1997 and abandoned in 1998
6.	Pune	Build-Finance-Transfer (BFT) for water and sewerage system for construction, finance, operations and billing and collection	Initiated in 1997 and cancelled in 1998
7.	Nagpur	BOT for water treatment plant, transmission and distribution system	Initiated in 1998 and abandoned in 1998
8.	Kolhapur	BOT for water	Initiated in 1997 and abandoned in 1997
9.	Surat	Initiated as long term concession for water and wastewater in 1998	Abandoned
10.	Haldia	BOT for water source development	Initiated in 1998 and abandoned
11.	Kakinada in AP	Initiative by Northumbrian Lyonnaise International for operations and maintenance with appropriate investments	Initiated in 1998 and abandoned
12.	Delhi	BOT project for water treatment plant	Discussion initiated in 1998 and no action

Source: Mehta, 1999, cited in Satyanarayana, 2002.

While there are few instances such as Tirupur, Jamshedpur and Hubli-Dharwad where PPP in water sector are working (as indicated in Table 4.2), majority of the cases of PPP are abandoned or action not initiated after the feasibility study (Table 4.3). It can be argued here that there are apprehensions on the private sector participation in water sector. The PPP cases discussed above gives enough hints that the PPP model of water delivery in the absence of any regulatory mechanism is not taken as model cases. These instances of PPP and its outcome are not very encouraging. There is also general distrust towards such move by the government. The general thinking is such private sector participation eventually leads to privatisation of water. Therefore the argument is a basic service like water delivery cannot be left to the private sector owing to the quality and social equity risk associated.[29] If PSP is to be at all useful in urban water supply sector, then firstly, the state will have to create credible regulatory mechanism. Without such credible mechanism to ensure quality, equity and sustainability, PSP will only prove disastrous for the people. In addition to PSP, there are other forms of market mechanisms those are actively made use of for provisioning water.

4.5 Water markets

Structural adjustment is a policy package that can be called as a modified version of the *free trade* agenda.[30] Structural adjustment programme requires the debtor government to open its market for international markets. The key structural adjustment measures include, privatizing government owned enterprises and government provided services, cutting public expenditures, orienting economies for export promotion, trade and investment liberalization, higher interests rates, eliminating subsidies on consumer items such as- food, fuel and medicines and increase in tax rates. The primary objective of these measures is to shrink the role of the State and give greater role for the market forces to play.

One of the important features of IMF stabilization programme was the promotion of the market mechanism by reducing the scope of the government interventions. Concretely this meant that there would be internally price control and discouraging of subsidies and externally trade restrictions were all to be removed. The reforms initiated were thus market oriented. It was being said that, economies to be

successful, should be market oriented.[31] The market was expected to replace the State. In such a situation water markets gained prominence. As it is already discussed, water in the new policy environment is treated as a commodity; the growing role of market in water allocation became a spontaneous process. Water is allocated to the highest paid user. In a regime of water markets, water is expected to be transferred from less efficient uses such as irrigation which has less value to more efficient use in urban areas having higher returns. The market solution to inter-sectoral water allocation with appropriate compensation by the buyers to the sellers is considered to be mutually beneficial and agreeable to all concerned.[32]

The easy availability and supply of packaged water in urban areas, burgeoning bottled-water plants and private water tankers are all manifestations of water markets. For instance, private water markets exists in one form or the other, they contribute five per cent of the total water supply in Chennai. They supply bulk of untreated water as well as mineral/ purified water in Chennai. The buyers of this water are mostly that of urban middle and upper class and catering less to urban poor class, as they find it too expensive.[33] Private companies are widely involved in supplying water through tankers, supplying bottles water, providing piped water supply, rooftop rain water harvesting and recycling rain water in urban region, like in Rajkot, Kolkata and Mumbai.[34] They become necessary and possible only because of the failure of public systems in terms of the duration, regularity and dependability of supply and the quality of the water provided. Another response to the projections of future water needs is that the answer may be found in water markets.

4.6 MNCs and packaged water

The depletion and deterioration of water resources has taken place with the rise in the power of transnational corporations driving the local communities and indigenous people over their share of water.[35] The market forces have taken hold and there is a big private sector with many multinationals and transnational corporations operating in the country in water sector. They are operating both in terms of water supply, distribution and maintenance, and bottled water business. It is estimated that, the bottled water business in India is worth Rs. 12,000 crores.[36] As a direct result of the concerns related to the quality of water supplied, the bottled water industry is

expanding at a very high rate, though there too, there is no monitoring of the quality of water supplied.[37] The growing bottled water industry in India adds a problematic dimension to the already strained availability of water to communities for their basic survival needs. It would appear that water as commerce has replaced the State's obligation to ensure availability to the community of basic minimum quantities of affordable water. Thus, the scarcity of water is transformed by the multinational companies and donor agencies into a market opportunity for water corporations.[38]

The policies pushed by the donor agencies with an underlying objective of converting potable drinking water from fundamental right to a mere commodity. In such a regime water cannot be claimed but can be bought or sold in the market. The rationale behind this is, trading in water rights promotes water use efficiency as markets allocate water to the highest valued use.[39] Therefore, resource use efficiency scarcity argument is advanced to make water a commodity. A consensus has slowly been build that there is water scarcity and in the interest of water use and efficiency, water needs to be both priced and traded.[40]

4.7 Creating scarcity

There is also a debate on the scarcity of water; scarcity that is denying people drinking water. However, strictly speaking scarcity appeared to have been artificially created in order to pave the way for business in water. When the State has the sole responsibility of supplying water there is scarcity and so a section of the society is deprived of their basic right. However, one wonder and the move is questionable, that water availability to all will be ensured by the private sector. The argument is, if State does not have enough water to meet the demands of its citizens, how a private entity or a company can ensure its availability to the people.

Therefore the problem does not seem to be with the physical availability of water rather the policies perused by the State in this regard. There are also instances when the State leased out water bodies like rivers to the multinational companies and gave permission to tap groundwater enormously, to be exploited to their own ends. In such cases, people in the surrounding areas of the river are barred from using the river water and hence water is scarce to them. Further the industrial unit which has got

permission to draw groundwater for business purpose put in place deep bore holes resulting the groundwater table fall sharply. In this case water becomes scarce to the people as they do not have resource to put a bore hole that is deeper than the private company's. Such move by the State artificially creates a situation where water becomes scarce to the people living in the surroundings. One wonder when the State does not have enough water to provide its people for drinking on the other hand, it has leased out water bodies to the private parties.

4.7.1 The Sheonath river in Chhattisgarh

The leasing out of a river stretch to a private company shows the callous attitude of the government towards people's needs and livelihoods. Such move by the government made water artificially scarce for the people in the adjoining areas and the downstream. The state owned Chhattisgarh State Industrial Development Corporation (CSIDC) entered into a contract with the private company Radius Water, a division of Kailash Engineering, for a period of 22 years under which the private company was permitted exclusive rights to a length of 23.5 km of the Sheonath River. Under the build-own-operate-transfer agreement, the company was permitted to build barrages over the allotted stretch for diverting water to a reservoir. Initially people were not aware of the contract. However the private company denied permission to the local fishermen to operate near the barrage and the local farmers were denied permission to pump water to their agricultural fields as well as sink bore wells. The company had the backing from the district administration. Subsequently in the downstream, people found water levels in their wells and bore wells going down substantially.[41] On the other hand, the water from the barrage was supposed be sold by the private company to the state-owned corporation which in turn would sell it to the ultimate users in the nearby industrial township. The agreement invited strong protests compelling the government to announce its cancellation.[42]

In other cases, the setting up of bottling plants by the multi-national soft drinks companies and their ability to corner prime groundwater sources have generated much of the scarcities in the rural as well as in the urban areas. The recent case involving the settling up of a bottling plant by Coca Cola in Kerala is one such instance.

4.7.2 The Coca Cola plant in Plachimada, Kerala

The Plachimada struggle against soft drinks MNC Coca Cola highlights the issue of community needs being pushed to the background on the face of priority to the commercial interests. In March 2000 the Perumatty *Gram Panchayat* in Palakkad District in Kerala, granted a licence to the soft drinks MNC Coca Cola to set up its bottling plant at the village Plachimada on a total area of 35 acres. Coca Cola began extracting 561,000 litres of groundwater through six bore wells and two dug wells. Within two years there were numerous complaints from the communities residing around the area of the plant of acute drinking water scarcity and environmental problems. As a result of continuous struggle by the local people, the *panchayat* decided to cancel the licence on May 15, 2003. The company challenged this decision by the *panchayat*, and the State government put the cancellation on hold. Further the state government directed the *panchayat* to constitute an expert committee to examine the soil and groundwater samples to ascertain the truth of the complaints. Not convinced by this decision of the state government, the *panchayat* petitioned the High Court of Kerala. A single judge accepted the contention that water was a public wealth and its excessive extraction by a private actor could not be permitted by the state which is the public trustee of the precious community resource. Coca Cola was restrained from extracting further groundwater through the wells on its land. On appeal by the company, a bench of two judges of the High Court reversed the single judge and directed the *panchayat* to renew the licence. This it did after receiving the report of an expert committee constituted by it. The *panchayat* has taken the case to the Supreme Court where it is pending. Since 2004, the company was forced to stop production due to non-compliance of state pollution control regulations and other environmental regulation violations.[43]

A simplistic proposition might be to say that the privatization of a service is acceptable subject to regulation, but that we must be wary of privatizing the resource itself. The prime motive of the private corporate sector is profit. If considerations of profitability come into conflict with other considerations, profitability will prevail. So the appropriate role and reach of markets cannot be predetermined on the basis of some overgeneralisations either in favour of placing everything under the market, or

of denying everything to the market.[44] Further a market-based approach to the management of water resources has serious socio-economic implications. Such an approach towards an inevitable necessity of life has serious implications on the equity and sustainability of it. Moreover there are important issues of equity, social justice and sustainability, which are not the concerns of the market forces.[45] Therefore the market approach to water delivery, it is argued has led to the inequality in access to safe water.[46] Thus, access to water is denied to many because of the policies pursued by the State itself.[47] In the process privatization of water had adverse effects on the poor. The growth rate of the market intervention is predicated upon the rolling back of the State from its main responsibility i.e. to provide safe drinking water to the people.[48] The present level of deprivation of poor is a consequence of the failure to be inclusive while planning for water. In addition a substantial portion of the benefits provided by the public agencies are consumed by middle and upper income households. However, it appears with the onset of the neo-liberal policies of the government the issue appeared to have been hijacked by market forces. Therefore, there is a greater level of apprehension that increased privatisation of basic services would reduce their availability to poor.

There is now a wide spread dissatisfaction with the neoliberal orthodoxy across the world, manifested in the increasingly frequent civil unrest in developing countries and the anti-globalisation demonstrations in developed countries.[49] In this context the role of civil society organisations is lauded based on certain successful involvement of civil society organisations in protecting people's access to drinking water.

4.8 Civil society organisations and water provisioning

With the onset of reforms in governance the role of civil society became prominent in the development discourse. One of the major causes for the emergence and strengthening of the civil society can be attributed to the implementation of the economic reform programmes by the World Bank and IMF and other donor governments in the eighties. The reform package was introduced in response to the perceived failure of the State-led development model. The reform process introduced during the 1980's supported a limited State, which gave impetus to the civil society

organizations to grow faster in contrast to the State. The donors saw in downsizing the role of the State and expanding the role of the market a means of achieving faster economic growth. Further, they saw the best way to implement the programme for reduced role of the State was simultaneously strengthening the civil society. This was the policy programme spelt out in the *Washington Consensus,* which categorically states that, "the size and role of the State should be severely reduced."[50] As a result of these reform programmes, it was envisaged that the State had to withdraw from many of its responsibilities. This created a vacuum, which according to the donor agencies had to be filled up by the civil society organisations.[51]

The State-centric model of development had its own excesses, with the dominance of State institutions pervading the lives of people and in excluding them from decision-making process which gave wide scope for corruption and the nexus between political executives and the industrial elites widened. This in turn led to various social movements[52] in the subsequent decades, which questioned the legitimacy of the State institutions' ability to implement policies. The second half of the 20th century witnessed a loss of faith in the institution of the State, which led to a revival of interests in social institutions. Taking cue from the active participation of civil society in the social movements it was felt that there was a need to link the issue of strengthening of civil society vis-à-vis the State.

For the purpose of the present study, civil society can be defined as free associations outside the State apparatus consisting of the set of institutions and organizations situated between the State and household.[53] It is the space between the State and the family where people associate themselves aside from the market and autonomous of the State.[54] Specifically, this refers to the diverse citizen associations and non-governmental organizations that unite to promote causes or issues of mutual interest and to influence decision-making processes. In the development discourse, it is also viewed as the *third sector*, where the other two sectors are the State led public sector and the private sector with profit and business orientations.[55] It is viewed as third sector because, "there are many private institutions that exist between State and market and serve public purposes which includes voluntary associations, charities,

non-profit foundations and nongovernmental organizations that do not fit to the State – market dichotomy."[56]

Civil society organisations have sought to promote greater consultation and popular involvement in the policy formulation process especially by disadvantaged groups, which have traditionally been denied access to political power. The civil society organisations could also play a major role in order to influence any policy decisions of the State and influence a particular policy.

According to the World Bank, participation is a key to sound projects and greater sustainability. The Bank defines participation as "the process through which stakeholders influence and share control over development initiatives, and the decisions and resources that affect them."[57] At the core of the participation agenda is the idea that those affected by development should form partnerships with aid-organizations in order to define and implement policies. There are two important aspects of participation. First, encouraging the States to take the views of those previously excluded from the policy-making process into account: that is, the poor, the vulnerable, and minorities in the society. The key assumption behind the participation agenda is that consulting civil society groups will make the development process more effective, as it will enable the donors and governments to find out what the poor and minorities need. Second, is the Bank's extension of the management and administration of development to actors other than the State: that is, civil society organizations such as, transnational NGOs. It is being viewed that, rapid growth and expansion of NGO's in developing countries as evidence of the increasing demand for participation and genuine representation. By this active participation, services such as drinking water are directly provided to the poor and thus the weak public provisions of services and goods including drinking water through the State can be transcended.

4.8.1 Civic protests in Plachimada, Kerala and Sheonath, Chhattisgarh

The case of Plachimada, Kerala and Sheonath, Chhattisgarh highlights the important role played by civic organisations in protecting people's access to water in the face of commercial exploitation. Civic protests in both the cases eventually led to prevention of commercial exploitation of water.

The case of Plachimada, Kerala discussed earlier in the present chapter involves, among others, the issues regarding the extent to which community level decision making bodies can influence the activities of corporations and private actors. The issue at stake is the violation of the right to a common property resource-water and the consequent resistance of local communities against such a violation. Water as a common property resource was managed by the members of the community. Consequently with the rise of modern governance system, CPR was transferred to the state or government *to be held in trust* for the people. However the emergence of neo-liberal system limited the role of government as a result the social welfare function of the government such as water supply is transferred to the private sector thereby making water a saleable commodity in the market. In the case of Plachimada, while the state government of Kerala claims scarcity is not due to the company, the local government i.e. the panchayat has no regulatory power over the company. In the end people are the sufferers. The Coca Cola *Virudha Samara Samiti* (Anti Coca-Cola Struggle Committee) in Plachimada which has spearheaded the campaign against Coca-Cola with the determined efforts and persistence struggle of its member made the company to stop operation. The founder leader of the *Samiti* Ms. Mailamma was convinced that water is a birth right and a private company cannot take away their right. It is the responsibility of the government to take decision for the common people. When the government fails to act, it is the people who have to fight for their rights.[58]

In the case of Sheonath river also it was people's persistence struggle which made the government to look afresh at the deal. A huge rally took place on November 1, 2003 under the banner of the *Sheonath Nadi Mukti Andolan* (Save Sheonath River Moment). Members of the youth federation went to 50 villages to conduct awareness campaigns. The state government of Chhattisgarh ultimately decided to scrap the deal owing to intense pressure from citizens and media groups.[59] It is therefore envisaged that when people from lower strata of the society participate in the decision making process, the decision would have more influence leading to strengthening and promotion of good governance. A participatory approach and decentralized decision-making to water management and distribution would make it sustainable for the future.

4.8.2 Forum for a better Hyderabad

The consistent pressure from a coalition of civil society organisations in Hyderabad has made the government responsible for a sustainable development. The Forum for a Better Hyderabad is a coalition of NGOs in Hyderabad. It is primarily engaged in public awareness on many of the environmental and other issues faced in the twin cities such as urban development, development of slums, protection of lakes and water bodies in and around Hyderabad. The Forum has succeeded in stalling many cases of encroachments and pollution of different water bodies in Hyderabad especially Himayat sagar and Osman sagar lakes which are two important sources of drinking water to the city of Hyderabad. In such cases it has drawn attention of the state government, the Hyderabad Municipal Corporation and other public authorities to stop such acts by any private bodies. Notably the Forum in many cases has approached the Andhra Pradesh High Court for specific directions through Public Interest Litigations (PIL). In an important case, the Forum filed a PIL in the Andhra Pradesh High Court praying for strict implementation of the existing Government Order (GO)-111 regarding Osman Sagar and Himayat Sagar.[60] The persistent pressure from the Forum through memorandum to the state government, chief minister of Andhra Pradesh and other related officials finally paid off. The then chief minister of Andhra Pradesh Dr Y S Rajasekhar Reddy directed the officials of the Municipal Administration & Urban development ministry to strictly follow the guidelines and order issued in GO -111.[61] The forum has also The Forum for a Better Hyderabad has made a positive impact in the lives of the people in Hyderabad through awareness campaign. The Forum is in a consistent awareness campaign in the twin cities for various issues those are affecting the citizens such as water pricing and tariffs.[62]

While the above are few individual cases where different Community Based Organizations (CBOs) are trying to secure water for the people in the absence of an effective state mechanism to deal with their problem. There are several such organisations present all over the country which are successful in mobilizing people's participation, such as the Tarun Bhagat Sangh in Rajasthan, Shradha in Himachal Pradesh, and Service Centre in West Bengal. They are at the helm of people's

participation in water resource management for sustainable use to the future.[63] Therefore participation of the community members in the management of water is seen as the most important means to make water sustainable in future. The new approach emerging from the third sector is "communitisation of water rather than privatisation of water."[64]

There is a growing debate on the concept of civil society and the role it plays in relation to the State. According to one view, civil society would substitute the State since diverse civil society organisations can perform the functions, which the State could not. In their view the State is not efficient enough in service delivery and especially in performing its basic welfare functions like health, education, providing basic necessities like drinking water to its citizens, generating employment and so on.

Therefore it is envisaged that the civil society organisations would directly work with government in shaping, financing and delivery of drinking water and public services and hence become a partner with the State institutions in designing and providing numerous services to the people. By becoming partners with the public institutions and working effectively it would enhance the quality and effectiveness of public service such as drinking water. Consequently civil society organisations are increasingly getting involved in social welfare functions such as drinking water provisioning which the State was doing earlier.

Civil society organisations particularly the non-governmental organisations become substitute to governments when they involve in the direct delivery of services to meet emergency or humanitarian relief in crises. A civil society organisation also takes over State functions, at times, when the State machinery fails to deliver services and goods to its citizens in times of utter needs. The reason for this enhanced role of civil society organisations in the development process is their efficiency and effectiveness in meeting the needs of people. The civil society organisations possess development capacities and capabilities which the State and government lack, and are thus accepted as a necessary part of the development process on this basis.[65]

The increasing role of civil society has become a challenge to the State and its institutions. For example, in the case of India, there are numerous self-helf groups,

which are parts of the civil society organisations, are emerging to serve the needs of their members and communities. On the other hand, civil society organisations are also engaged in the delivery of services like drinking water, education and health care, sanitation and so on. All these functions by the civil society organisations, undermines the State institutions where people rely more and more on such organisations than the State.

Some proponents of civil society say that, instead of substituting the State, the role of civil society organisation is in exercising pressure on the State to make its functioning active, efficient and transparent thereby essentially playing the role of a pressure group. For example, in the case of India, civil society organisations have pressured the State to broaden the scope of its public policy to include the interests of marginalized and depressed section. Civil society organisations which are working in the area of environment, gender, health, education, and others have brought the affected people to the forefront and pressurised the government to recognise their opinion.[66]

The community level participation in water supply and management is often ignored by the international development community.[67] But, a consensus has strongly been built that public participation is a necessary input for both efficiency and equity because private ownership and operation often neglect social goals.[68] In a centralized system of planning and plan execution, everything is planned at the central level without involving the local people. The decisions are made without considering the local context; the real problem faced at the local level and thus it becomes a limited success or sometimes a failure. A participatory approach and decentralized decision-making to water management and distribution would make it equitable and more sustainable for the future. The new coalition of energized and organized communities created will find innovative solutions to the problems at the local level.

4.8.3 The initiative of Satya Sai Trust in Anantapur, Andhra Pradesh

The initiative of Satya Sai Trust in Anantapur shows the important role played by a voluntary agency in the absence of effective state initiative to provide drinking water to the people. Anantapur District in Andhra Pradesh, is arid and drought-prone.

Ground water is scarce and has an unacceptable level of flouride that causes bone deformities and dental disorders. For decades, the villagers of this District faced continual hardship in getting good drinking water. However in 1994 Sri Sathya Sai Central Trust under Satya Sai Baba took a new initiative to provide drinking water to the people. The Trust had completed drinking water projects for 730 villages in Anantapur district at a cost of Rs. 300 crores benefiting 12-lakh people. After the Project was completed, the Sri Sathya Sai Central Trust operated the entire water works for over a year. The project was formally handed over to the Government of Andhra Pradesh in October 1997.[69]

The Trust also took over projects in several other districts. Projects in 179 villages in Medak district at a cost of Rs. 27 crores benefiting 4.5-lakh people and another 141 villages in Mahbubnagar district at a cost of Rs. 26 crores quenching the thirst of 3.5 lakh people were completed by the Trust. In total , the Trust's drinking water projects is benefitting about two million people in five districts of Andhra Pradesh at a total cost of about Rs. 500 crores.[70] The project of Sri Saty Sai Trust at Anantapur was also lauded by the Planning Commission in the ninth five year plan. The plan stated, "Sri Satya Sai Trust of Puttaparthy has set an unparallel example of private initiative in implementing on their own, without any State's budgetary support, a massive water supply project ... fluoride /salinity-affected villages and a few towns in Anantpur district of Andhra Pradesh in a time frame of about 18 months."[71]

Further, the Sathya Sai Baba announced a project to solve Chennai's water shortage, investing Rs. 200 crores in 2002. The project was completed by the end of 2003, independent of any government involvement except for supervision.[72] This helped Chennai to get additional water to meet the increasing demand. This is a case when the civil society organizations made positive changes in the lives of people. However the CSOs are not immune to influence by external funding agencies which at times have adverse impact.

4.9 Strengthening Civil Society and Donors' Influence

It must be recognised that the civil society organisations have been nurtured and developed with funding from external donor agencies in a big way. While such a

process has resulted in the undermining of the State and its capacity to deliver services, it has also given access to the donor agencies and countries to interfere in the development process of the country and in domestic affairs encompassing social and economic and political spheres. Indirectly, it has established a dependent relationship between civil society organisations and themselves and in return has started to influence policies of the government. Through funding they promote programmes and strengthen the capacity of individual organizations – which include, parliamentary lobbying, public education campaign, funding for research and other activities promoting for market oriented economic policies. This has particularly a very adverse impact on the policies on drinking water. People, officials, law makers are oriented towards a particular line of thinking which suits their interests.

Most of the current anti-poverty programmes advocate the involvement of the local bodies, private agencies, non-governmental organisations, voluntary organisations and the communities. The government funding to these programmes constitutes a part of the total funds and the rest are to be generated either through institutional financing or through private financing or to be generated from the communities. This automatically creates the situation wherein the institutions or the people having substantial funding to such programmes enjoys significant say in the decision making process. It is these people or the institutions who actually decides the details of such projects or the location of it.

What is of concern is that these sectors are largely unregulated and remain informal in nature. Additionally, the market-based institutions become disadvantageous in providing services to the disadvantages sections of society, and in safeguarding the environment. Recent emergence of bottled water across the country is a case in point. The buyers of these products are mostly that of urban middle and upper class.[73] Moreover, the private sector exploits groundwater sources creating environmental hazards and therefore negative externalities within the city limit and in the suburbs. Despite these concerns, the entry of these players, if regulated, could bring in some improvement to the status of the sector. The poor performance of water supply agencies has been used for encouragement of Private sector participation in

urban water supply. If the public system provided an adequate, reliable and safe supply, the demand for tankers or for bottled water may disappear.

Throughout the world, the trend is shifting towards partnership with the community in the decision-making process, in recognition of the centrality of the citizen. In India, this requires changing the mindsets of the three primary types of stakeholders: the government, the experts and the citizens themselves, and establishing institutional arrangements for such partnerships to succeed.[74] It is now amply clear that, the State provisioning of drinking water to the citizens have not yielded the desired results; on the other hand, private provisioning also leads to inequitable access to drinking water. Market solutions to the problem of access to drinking water may not be viable options in all situations and conditions. The growing importance of private entrepreneurship in urban areas has been a result of select localities having higher income and affordability of such services, opting for high quality amenities. Besides, there are an increasing number of non-governmental and community based organisations that have emerged are trying to improve the quality of basic service delivery such as drinking water in the poorer areas by mobilising the community and government machinery at the state and local level. Contrary to this, the people in the upper strata of the society have much larger capacity and affordability to organise themselves having better access to State institutions providing these facilities. The local bodies, in contrast are more interested to serve the groups that are politically and economically influential. Therefore, involvement of private sector and voluntary agencies sometimes could contribute to the increasing inequality in the distribution of basic services.

State institutions can be strengthened through people's participation for better water service delivery. A stronger State and its decentralized institutions strengthened through people's participation from planning to implementation to the decision-making level would make water accessibility easier and sustainable. This kind of arrangement would empower the people to decide for themselves and what kind of solutions they need for the problem they face at the local context, making it sustainable in the long run.

The present chapter dealt with the role of market and civil society in provisioning drinking water to the citizen. The neo-liberal reform has been the context where the debate on market delivering drinking water has emerged but with a price is discussed in the chapter. It is also highlighted in the chapter that scarcity is sometimes created with the State playing an active role in it. Towards the end of the discussion it is pointed out that market provisioning differentiate people according to the economic capability. The role of civil society is highlighted in this context where State is unable to provide people with drinking water and a market approach creates a division among them. The next chapter deals with the people's access to drinking water in Hyderabad and the role played by State, market and civil society organisations.

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[1] Pranab Bardhan, *The Political Economy of Development in India*, Oxford University Press, Oxford, UK,1984, pp.40-42. Also see, S.R. Maheswari, "Reinventing Public Administration in India: The Challenges of Liberalization", *Indian Journal of Public Administration*, Vol-XLII, No-3, 1996, p. 395.

[2] The Central Public Health and Environmental Engineering Organisation (CPHEEO), created in 1953, is the technical wing of the MUD, which advises the Ministry in all technical matters and collaborates with the state agencies about water supply and sanitation activities. CPHEEO plays a critical role in giving technical sanction to externally funded and special programmes and those parts funded by the Life Insurance Corporation (LIC) of India. CPHEEO also plays a central role in setting design standards and norm for urban water supply.

[3] *Manual on Water Supply and Treatment,* CPHEEO, Ministry of Urban Development, New Delhi, 1999, P. 522.

[4] Adrian Leftwich, "Governance, the State and the Politics of Development", *Development and Change.* Vol-25, 1994, p. 369.

[5] Ibid.

[6] Ann-Christin Sjolander Holland, *The Water Business: Corporations versus People,* Books for change, Bangalore, 2005, p.12, 90.

[7] *The Dublin statement on water and sustainable development,* Dublin, Ireland, January 31, 1992. Available online at http://www.inpim.org/files/Documents/DublinStatmt.pdf

[8] Ramaswamy R. Iyer, "Strive for Sustained Supply", available online at http://www.tribuneindia.com/2005/specials/tribune_125/main15.htm

[9] Ramaswamy R Iyer, "Water: Towards a Transformation a Critique and a Declaration", *Occasional Paper No. 10, CPR Occasional Paper Series,* Centre for Policy Research, New Delhi, 2004.

[10] Greater inputs in this point however came from the numerous seminars, conferences that the researcher has been attending on water issues. The primary understanding on this point however came while association with the Administrative Staff College of India (ASCI), Hyderabad. The staff college being a prime organization in the training of senior level bureaucracy across states in India, during such training programmes the researcher observed how the officials and professionals dealing with water supply are oriented towards private participation in water sector.

[11] *Urban Water Supply and Sanitation Report,* Volume-I, India Water Resources Sector Review, Rural Development unit, South Asia Region, The World Bank, New Delhi, 1998, p.29.

[12] Op cit, No-6, p.70.

[13] John Briscoe and Harvey A Garn, "Financing water supply and sanitation under Agenda 21", in R Maria Saleth (Ed), *Water resources and economic development,* Edward Elgar Publishing Ltd, Cheltenham, UK, 2002, pp.256-67.

[14] Peter Rogersa, Radhika de Silva and Ramesh Bhatia, "Water is an Economic Good: How to use Prices to Promote Equity, Efficiency, and Sustainability", *Water Policy 4,* 2002, pp.1-17.

[15] *Report of the PPP Sub-group on Social Sector,* Public Private Partnership, Planning Commission, Government of India, November 2004, p.1.

[16] Ibid, p.56.

[17] Op cit, No-6, p.177.

[18] Op cit, No-6, p.177. Also see Reto Thoenen, "Public private partnership in water and sewerage: an African perspective", paper presented at the NIRD foundation day seminar, Hyderabad, November 10-11, 2006.

[19] Op cit, No-6, p.70.

[20] Reto Thoenen, "Public private partnership in water and sewerage: an African perspective", paper presented at the NIRD foundation day seminar, Hyderabad, November 10-11, 2006.

[21] Op cit, No-15, p. 23.

[22] Roopa Madhav, "Tirupur Water Supply and sanitation Project: An Impediment to suatainable Water Management?", *IELRC Working paper 01,* 2008, p. 1-13. Available online at http://www.ielrc.org/content/w0801.pdf

[23] *The Hindu,* "Row over privatization of water supply", August 2, 2002, http://www.thehindu.com/2002/08/02/stories/2002080204030600.htm

[24] District metering in water supply refers to fixing of bulk meter in a larger area termed as a district, comprising of several individual house service connection with individual meter. This is done in order to find out the exact amount of water loss while distribution.

[25] D.S. Madhumathi, "Project to plug leakages: BWSSB to shortlist bids." *The Hindu Business Line,* December 26, 2002. Available online at http://www.blonnet.com/2002/12/26/stories/2002122600811100.htm.

[26] See for details www.delhijalboard.nic.in

[27] *NCR Tribune,* "BJP resents foreign origin of Sonia Vihar water project", February 24, 2004, http://www.tribuneindia.com/2004/20040224/ncr1.htm

[28] While interacting with the people in Hyderabad and with the HMWS&SB officials, the researcher was made aware of the metering issue at Adikmet during 2007.

[29] Interview with Mr. Rajendra Singh, founder Tarun Bhagat Sangh, Hyderabad, December 22, 2004.

[30] http://www.thirdworldtraveller.com/IMF-WB/20Questions IMF.htm

[31] L C Bresser Pereira, J.M. Maravall and Adam Prezeworski, *Economic Reforms in New Democracies: A Social Democratic Approach*, Cambridge University Press, Cambridge, 1993, p. 30.

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[33] *Improving Water Services through small-scale private providers-Water Vending in Chennai,* UNDP/ World Bank, New Delhi, 1999, p.14.

[34] Joel Ruet, V S Saravanan and Marie-Helene Zerah, "The Water and Sanitation Scenario in Indian Metropolitan Cities: Resources and Management in Delhi, Calcutta, Chennai, Mumbai", *CHS Occasional Paper No-6,* French Research Institutes in India, New Delhi, 2002, p. 7.

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[36] Ashish Ghosh, *Natural Resource Conservation and Environment Management,* APH publishing, New Delhi, 2003, p. 43.

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[39] Ariel Dinar and Ashok Subramanian, "Policy Implications from Water Pricing Experiences in Various Countries", in R Maria Saleth (Ed), *Water Resources and Economic Development,* Edward Elgar Publishing Ltd, Cheltenham, UK, 2002, pp. 357-68.

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Chapter - 5

Provisioning for Drinking Water in Hyderabad

Chapter four discussed the involvement of private sector and the civil society organisations in water provisioning to the people. While the neo-liberal context made the delivery of drinking water more market centric making it a commercial resource, on the other hand the involvement of civil society organisations appeared to have made a positive change towards people's access to water. In addition civic movements at times have prevented commercial exploitation of water. The present chapter deals with the people's access to drinking water in Hyderabad. The chapter is divided into three sections. The first section gives an overview of Hyderabad and the provisioning of drinking water before the creation of Hyderabad Metropolitan Water Supply & Sewerage Board (HMWS&SB). It also briefly discusses why and how the HMWS&SB was created. The second section deals at length about the HMWS&SB and water supply in Hyderabad. In addition it deals with the composition, and organisational set up of HMWS&SB, service area, sources of water supply, service indicators, water service connections, demand and deficit and water tariffs in Hyderabad. The last section deals with the HMWS&SB's efforts to engage private parties in different aspects of water supply, the role stake holders such as the elected representatives, market agency and civil society involvement in people's access to water.

The pace of urbanisation in Hyderabad in the past few decades is quite rapid. As the city is the largest contributor to the state's GDP, business establishments and also common people have found it as a suitable destination for all the economic activities. With an increase in service sector base, in the city, there is a consequent increase in the population. Providing basic civic services to the ever increasing number of people is a challenge to the city administration. Drinking water being the most basic necessity, the city administration appeared to have made all efforts in providing basic requirements to the people.

5.1 Hyderabad: A Profile

The city of Hyderabad has a history that goes back to 400 years. It was founded on the banks of the river Musi in 1591-92 by Muhammad Quli Qutb Shah and remained a capital of the Quli Shahi rulers. It was an independent province under the Nizams during the British period. When India got independence in 1947, the State of Hyderabad was merged with the Union of India and later became the capital of the present state of Andhra Pradesh.

Hyderabad emerged as one of the prominent cities of the post-independent India and it is one of the largest metropolises in India. With an area of about 778 square kilometres, the Hyderabad Urban Agglomeration (HUA) consists of Municipal Corporation of Hyderabad (MCH), Secunderabad cantonment, the ten surrounding municipal towns, Osmania University, some out growths (OGs), and a few smaller settlements.[1] There are people from different walks of life and from different regions in India. The growth of IT sector has propelled the city's growth phenomenally.

From April 2007 onwards it became Greater Hyderabad Municipal Corporation (GHMC) based on a notification released on 16th April 2007 by the Government of Andhra Pradesh. The city is divided into (5) Zones (including North, South, Central, East and West) and 17 circles to provide better services. The 12 surrounding municipalities[2] were merged into the earlier MCH area leading to the creating of the Greater Hyderabad Municipal Corporation (GHMC). For a comprehensive planning of this, the state government created an exclusive agency. It is christened as HUDA (The Hyderabad Urban Development Authority).

5.2 Hyderabad Urban Development Authority (HUDA)

The Hyderabad Urban Development Authority[3] (HUDA), authority extends over an area of 1865 sq. kms covering the entire district of Hyderabad and parts of Ranga Reddy and Medak districts of Andhra Pradesh. It includes the 175 sq. kms under the Hyderabad Municipal Corporation area, 416 sq. kms under the 10 municipalities and 1237 sq. kms under the 106 gram panchayats. The Government of Andhra Pradesh has expanded the jurisdiction of HUDA towards the constitution of

Hyderabad Metropolitan Development Authority (HMDA) keeping in view the rapid growth trend in Hyderabad.[4] The enlarged jurisdiction of HUDA now extends to 54 Mandals located in five districts with a total area of nearly 6300 sqkm. Earlier the area under HUDA constituted nearly 300 villages. With the proposed creation of the HMDA, 600 villages are now added.[5] The villages that formed part of the larger HMDA are coming under Medak, Ranga Reddy, Nalagonda and Mahaboobnagar districts in Andhra Pradesh.

5.3 Demographic trends in Hyderabad

Hyderabad recorded rapid population growth in the last few decades. From a population of 12.5 lakhs in 1961, its population reached 25.5 lakhs and almost trebled to 43 lakhs by 1991. According to 2001 census, city's population (erstwhile MCH) is 36.3 lakhs. It is ranked as sixth largest city among the major metropolitan cities in India. It is estimated that by 2021 the HUA will have a population of one crore. The decadal growth rate of Hyderabad Urban Agglomeration (HUA) was 43 per cent and 67 per cent during seventies and eighties respectively. But it came down to 31 per cent during 1991-01. However, much of the spatial expansion in the last two decades in the HUA has occurred in the erstwhile ten surrounding municipal towns. These towns recorded a high growth rate of 71 per cent in nineties as compared to only 18.7 per cent by the core city (erstwhile MCH area). Several of these surrounding municipal towns have been growing at high rates from eighties onwards. Their share of population in the HUA has increased from about 23 to 30 per cent while there is a corresponding decline of population in the erstwhile MCH area.[6]

Table 5.1: Demographic profile of Hyderabad

City Population	36.3 lakhs
HUA Population	57.5 lakhs
Decadal Growth Rate (City)	66.6 per cent[a]
City Area	260 sq. km.
Metropolitan Area	688 sq. km.
Number of Slums	811[b]
Slum Population	14.1 lakhs

Source: Census 2001 and Municipal Corporation of Hyderabad (MCH)

[a] Decadal Growth Rate is in the 1980s

[b] This refers only the notified slums. There are several hundred more non-notified slums in the HUA.

5.4 Drinking water in Hyderabad: access and quality

The city of Hyderabad without any perennial river is primarily dependent on the lakes and tanks for drinking water purposes. As the city grew physically and demographically over the years, the sources of drinking water got either dried up and shrink and in some areas are polluted. Consequently there is always search for new water sources sometimes in the distant rivers to meet the growing water needs.

Three sources from where drinking water needs of Hyderabad are met. These are: (1) HMWS&SB (Individual house service connections, group connections, water tankers and public stand posts (PSPs), (2) Private sources (Packaged drinking water, bottled mineral water, private water tankers and water from neighbours), and (3) Ground water (Individual bore wells, group bore wells and hand pumps).

While water supplied by the water board is the primary source for majority of the residents in the city, there are also people who depend on the private supply and ground water for their daily needs. However, in the past few years, the dynamics of drinking water provisioning to the people in Hyderabad have undergone phenomenal changes. One can notice an increasing trend of depending on private and ground water source. Inadequate amount of water and the low quality supplied by the water board is

often cited as the main reason. However if one looks into the history of water supply one comes across interesting aspects.

5.5 History of water supply in Hyderabad

The city used to have an organised water supply system. It is documented;

> "Sir Salar Jung the Great did so much for Hyderabad that it seems fitting that a memorial to him should take the shape of such a useful institution as water supply, which must be a blessing to every resident of the city, be he prince or pauper, high or low, rich or poor. The supply of water principally comes from Mir Alam lake ... There are twenty seven miles of piping, ranging from three to twenty four inches in diameter, which can supply on average of fifteen gallons of water per day to every inhabitant of Hyderabad, so that the city is not behind the cities of British India in this respect."[7]

Initially people in Hyderabad obtained water from rivers and open dug wells. For example, people of Lalapet, located in south of Hyderabad numbering about 5000 used to get their drinking water from a big well situated within a garden belonging to The Nizam, the Raja Pramukh of Hyderabad. This is so since times immemorial. Later the Secunderabad Municipal Corporation (SMC) obtained permission from The Nizam, to install a pump at the well and take water supply through pipes to the people of Lalapet at the cost of Secunderabad Municipal Corporation.[8] Gradually with the increase in the population of the city, there was dependence on outside sources. The Umada sagar (an irrigation tank) near Chandrayangutta was first used as the source of drinking water for Hyderabad.[9] Later the Mir Alam tank had been the main sources of drinking water to Hyderabad. The Hussain sagar (which is now in the heart of the city of Hyderabad) built in 16th century provided water to some localities, and towards the end of 19th century water from Hussain Sagar was exclusively used for drinking purpose. On the other hand, Secunderabad received its supply from Faukl sagar at Jeedimetla. Once, Osman sagar and Himayat sagar water supply was commissioned in the 1920s', all other sources became insignificant and later abandoned.

Hyderabad was inundated by an unprecedented flood caused by the river Musi on September 28, 1908. Most parts of the city were submerged and there was great loss both in terms of property and human lives. In order to prevent the recurrence of such disasters, two dams were constructed across the river Musi and its tributary river

Esi on the advice of Sir M. Visweswaraya, the celebrated engineer from Hyderabad between the years 1922-1927. This followed the Osmansagar and Himayatsagar reservoirs respectively on both the rivers. Since then these water bodies continued to be principal sources of drinking water to the city.

A separate agency Hyderabad Water Works was commissioned in 1922. With this, long conduit was built from Osman sagar to Asifnagar (Near Sarojini Devi Hospital), and service reservoirs were built at Red Hills, Bogulkunta and Chilkalguda to supply water to the city. In addition, a sump was constructed on Banjara main road to pump water to reservoirs built at Banjara Hills. The Osman sagar conduit was tapped near Shaikpet and water was treated and supplied to the military areas and also the civil population in and around Golconda fort. A separate reservoir for Secunderabad was constructed at Marredpally.[10]

5.5.1 Water supply to Hyderabad after independence

After Hyderabad was named as the capital of Andhra Pradesh, consequent to the re-organisation of states, there was sudden influx of population. As the city grew, the urban sprawl encroached into vacant lands and water bodies due to the increasing pressure on land for housing and other activities. Many water channels that used to carry floodwaters from one lake to the other in a catchment area are encroached by private agencies. Discharge of untreated industrial effluents has led to the total degradation of the water quality in many water bodies. No implementation of building regulations and pollution control laws has encouraged encroachment and pollution of water bodies.

Consequently meeting drinking water demand for the city population became more challenging. The two reservoirs Osmansagar and Himayatsagar utilised to their maximum level and in addition there was search for additional source of water. In the year 1958, a scheme was undertaken to draw water from the Manjira river which is near Sangareddy in adjacent Medak district, about fourty miles from Hyderabad. The scheme was commissioned in 1965. Water was pumped from the river to service reservoirs at Lingampally from where it comes by gravity to the city.[11] Later in the year 1972, due to persistent demand for drinking water, the Manjira phase II was taken up to draw additional water from the Manjira river.[12] As the demand for water

increased, Manjira phase III and IV was taken up and there was search for additional sources which included Krishna river and Godavari river.

The additional demand for water coincided with the rise in population including slum population. Especially in the slum areas which are ill served at times inadequate physical infrastructure and other technical issues such as land tenure meant that access to water in the slums become a cumbersome process. As the situation deteriorated and the pressure mounting, government took initiatives in development of the poorer areas which also included piped water supply.

5.6 Provisioning of drinking water in the slums and other poorer areas

There is considerable increase in the number of slums and population in the slums in Hyderabad. The Government of Andhra Pradesh has adopted a policy of tenure regularisation during 1995. Accordingly all slum dwellers residing on government lands for more than five years are eligible for tenure regularisation. In the case of private lands, government acquires them and regularises the tenure. Once regularisation is complete, government agencies take up several projects regarding housing improvement and other municipal infrastructure development such as drinking water supply.

There are two categories of slums, i.e., notified slums and non-notified. Slums are notified under the Andhra Pradesh Slum Improvement Act, 1956 for redevelopment and improvement. However, lack of clear policy guidelines, cumbersome procedures, political influence etc, have remained major problems in notification of slums. The developmental programmes are implemented only in notified slums, thereby depriving the poor in non-notified slums of even the barest services. Lack of clear and transparent guidelines has not only affected the process of notification of slums but also influenced the investment trends. Generally, there is a strong tendency to distribute the available funds equally amongst the wards irrespective of the slum population, which leads to skewed development and limited impact.[13] The consequent result of such government policy has led to limited access to basic services like drinking water.

5.7 Institutional arrangements

Before the present Water Board was created the Hyderabad Water Works Department was entrusted with the responsibility of supplying drinking water to the city of Hyderabad. The Hyderabad Water Works Department is part of Government of Andhra Pradesh. It is headed by a Chief Engineer, attached to the Municipal Administration Department of the state government usually dominated by technical experts. The Organisation was predominantly an Engineering Department for making arrangements for the supply of water. This agency gets its grants from the government, to meet both capital expenditure and deficits in the Operations & Maintenance costs. The erstwhile Hyderabad Water Works to run like any government agency with no focus on financial management and orientation for providing quality services to the people. With a view to ensure autonomy which enables to plan effectively the government created an exclusive agency the Water Board in 1982.

5.8 The Water Board of 1982

The Government of Andhra Pradesh through an act (Act 6 of 1982) created the water board. According to the provision in the Act, the Board was supposed to be headed by a person with administrative experience or an engineer with water works or a technical person with experience. Further, the most important feature of the water Board was the provision for representations from the community. According to the provisions, three non-officials shall be appointed representing different interests of the people from among the members of public. The primary reason for having such a provision in the Board was to elicit public views on different water supply issues. Though there are other sources of public views such as news papers or representations from public but these non-official members were important source of public opinion to the Board during discussion on important issues of water supply in Hyderabad.[14]

However, the Board was abolished a year after it was created. The water board was created as a pre-condition for granting of loans by the World Bank for water supply in Hyderabad. Since the government did not receive any loans from the World Bank, the water board was abolished.[15] It was then running as a department with no

public representative. The government redrafted to create the board again in 1989, they deliberately removed the provision for public representations. The reasons cited were; (1) public representatives would create problem during discussions, and (2) they would be a hindrance to the board's functioning by raising different questions. The government also wanted to make the Board a political sort of thing and headed by the Chief Minister of the state.[16] The new Board was created in 1989 (Act 15 of 1989). It must be noted here that the Government of Andhra Pradesh secured a loan (of ten million dollar) in May 1990 from the World Bank for Hyderabad water supply and sanitation.[17]

5.9 Hyderabad Metropolitan Water Supply and Sewerage Board (HMWS&SB)

The Hyderabad Metropolitan water Supply and Sewerage Board (HMWS&SB) was constituted by an Act of Andhra Pradesh Legislative Assembly with effect from November 01, 1989. HMWS&SB was created to give administrative and financial independence and increased responsibility while supplying drinking water to the people. The HMWS&SB has a mandate to plan, design, construct, organise, execute and manage water supply systems in the city.

5.9.1 Constitution and composition of the HMWS&SB

Chapter III of the Hyderabad Metropolitan Water Supply and Sewerage Act 1989 deals with the constitution and composition of the water board. According to the Act, the HMWS&SB consists of the following members (see table 5.2);

Table 5.2: Composition of the HMWS&SB

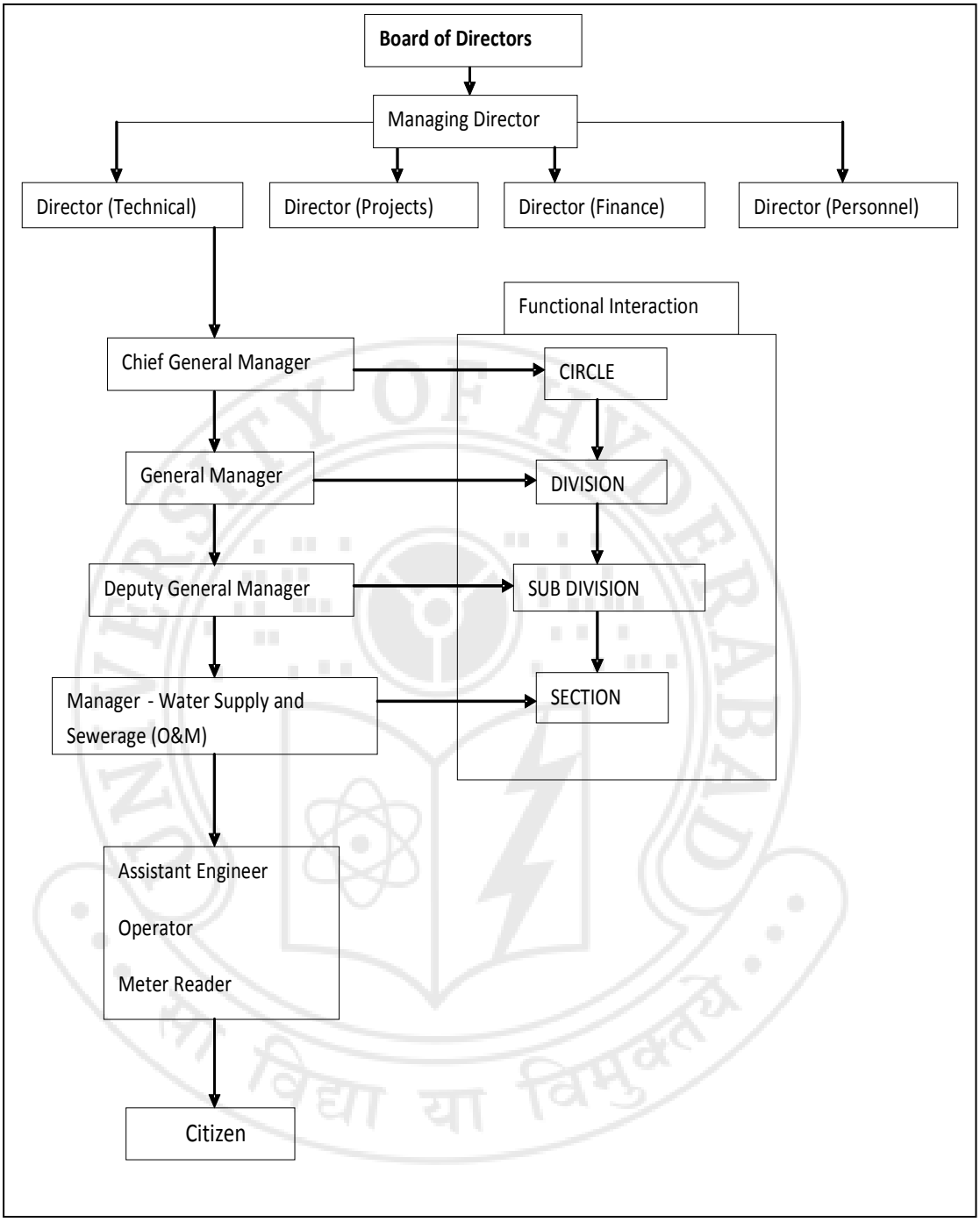
1	Chief Minister	Ex-Officio Chairman
2	Minister for Municipal Administration	Ex-Officio Vice-Chairman
3	Secretary to Government, Municipal Administration and Urban Development Department	Ex-Officio Director
4	Secretary to Government, Finance Department	Ex-Officio Director
5	Secretary to Government, Irrigation Department	Ex-Officio Director
6	Commissioner, Municipal Corporation of Hyderabad	Ex-Officio Director
7	Chairman, A.P. Pollution Control Board	Ex-Officio Director
8	Director, Health	Ex-Officio Director
9	A Chief Engineer of the Board, to be appointed by the Government	Director
10	One person nominated by the Government of the rank of Accountant General	Director
11	One person of the I.A.S. cadre to be nominated by the Government	Managing Director

Source: The Hyderabad Metropolitan Water Supply and Sewerage Act, 1989.

According to the Act, the chief minister of Andhra Pradesh is the chairman of the board with ten other members. Sometimes there are criticisms, that the head of the government in the state is heading a water board. This gives the chief minister unlimited power to formulate policies according to his likes and it appears the rationale of administrative independence of the board stands compromised.

Below the rank of Managing Director, there is a line of officials who actually deliver water to the people. Figure 5.1 below gives an outline of the organisation of the HMWS&SB and the channel of information before water is actually delivered to the people. While the managing director is a generalist officer, below his rank there is line of specialist officers most of them are engineers.

Figure 5.1: HMWS&SB Organisation Chart



Personnel at the top of the organizational chart are deputed by the Government unlike staff in charge of operations and maintenance. Theoretically, these persons cannot be deputed to HMWS&SB for more than three years while operational staff members are permanent employees. Staff members working under Section Managers are supposed to visit the houses of consumers for meter reading, bill distribution and

detection of illegal connections and to carry out feasibility studies. HMWSSB has adopted a structure consisting of four operational and geographical levels as seen in the organizational chart. The area under its authority is divided into four branches or circles, each of which is further split into 10 divisions. Each division consists of sections and sub-sections. At the centre, there are four Directors, each in charge of a service: technical, projects, finance and personnel.

Nevertheless, all policies are decided by a central administrative body. Within the framework of delegated powers in an organization, managers enjoy a certain amount of freedom in dealing with matters related to operations and maintenance. But decisions regarding investments can be taken only with prior permission from senior officials. However, policies related to connections and complaints were centralized after the setting up of Metro Customer Care (MCC) and Single Window Cell (SWC).

5.9.2 Service area

The service area of HMWSSB is 688.2 Sq.Kms, which includes MCH area comprising of 150 wards, ten adjoining Municipalities, Osmania University Campus and Secunderabad Cantonment, ten (10) enroute villages along national highway no 9 up to Sangareddy. The board is already providing water supply services to the two new municipalities, Patancheru and Ramchandrapuram. The board supplies in bulk to the municipalities and the municipalities in turn take up distribution and maintenance of water supply systems in their respective municipality.[18]

5.10 Sources of water supply

There are three important aspects of water supply to Hyderabad. (1) The time gap between successive projects after Manjira phase I in 1965 declines steeply. This reveals the rapid pace of urbanisation and the consequent growing demand for water. (2) The distance of the water source from the city is increasing with each new project, consequently increasing the cost as well as the distribution and transmission losses. (3) The recent water supply projects have relied on direct diversion of water from rivers through barrages and dams located far away from the city.[19]

The details of sources of water supply to Hyderabad after commissioning Krishna Phase-II Project are presented in Table 5.3 and Figure 5.2.

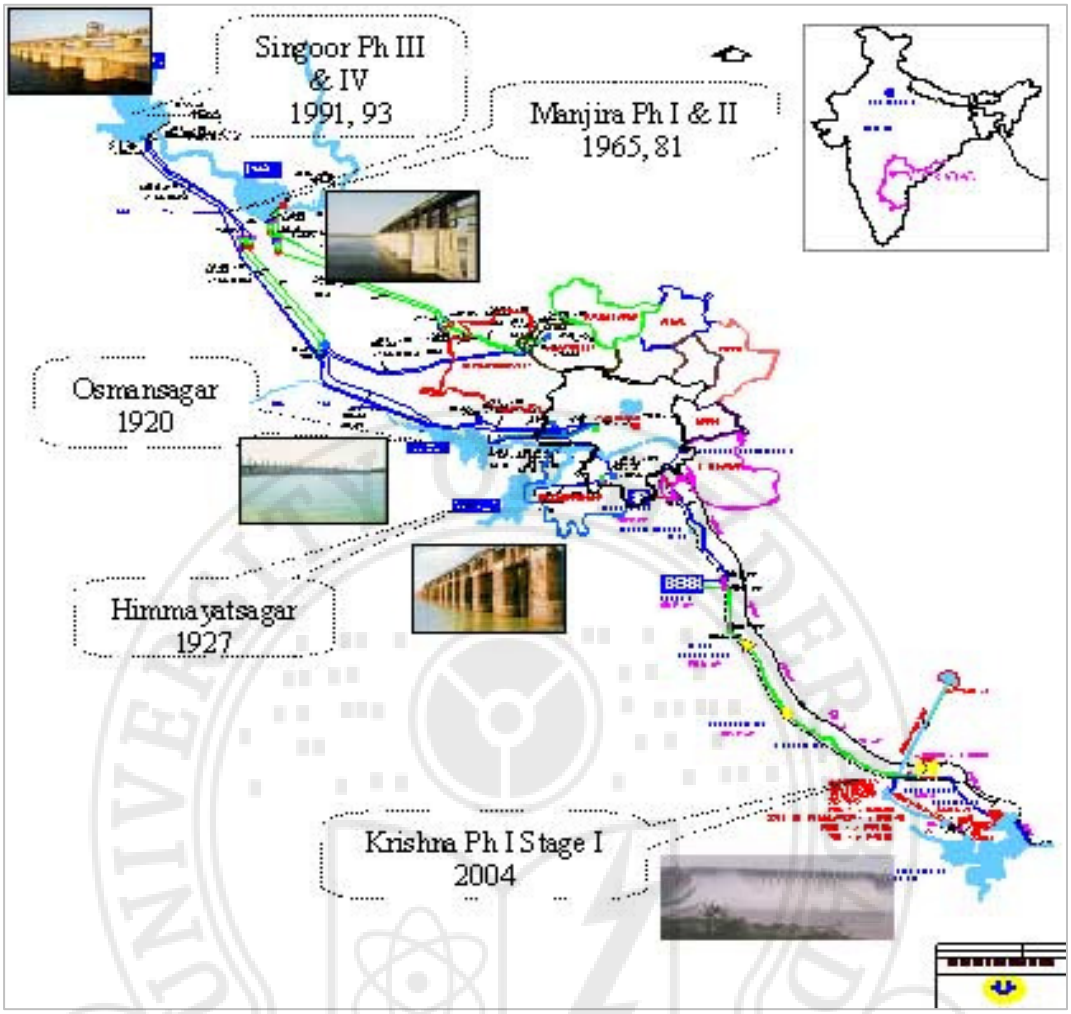
Table 5.3: Details of present sources of water supply to Hyderabad

Sl No	Source Name	River	Year	Impoundment Name	Distance from city km	Drawls (Mgd)
1	Osmansagar	Musi	1920	Osmansagar	15	15
2	Himayatsagar	Esi	1927	Himayatsagar	9.6	11
3	Manjira Phase I	Manjira	1965	Manjira barrage	58	15
4	Manjira Phase II	Manjira	1981	Manjira barrage	59	30
5	Manjira Phase III	Manjira	1991	Singur Dam	80	38
6	Manjira Phase IV	Manjira	1993	Singur Dam	80	39
7	Krishna Phase I	Krishna	2004/ 05	Nagarjun Sagar Dam	116	58
8	Krishna Phase II	Krishna	2008	Nagarjun Sagar Dam	116	

Source: Hyderabad Metropolitan Water Supply & Sewerage Board, www.hyderabadwater.gov.in

As can be seen from the above table there are in between 1920 and 2008, successive governments tried eight sources to augment water supply to the city of Hyderabad. The distance from the source to the city increased from 9 km to 116 km. Four plans are through Manjira 1965-1993. The above table gives other details. In all about 206 mgd of water is drawn for augmenting water needs of the city.

Figure 5.2: Present sources of drinking water to Hyderabad



Source: Hyderabad Metropolitan Water Supply & Sewerage Board, Hyderabad.

5.10.1 Existing transmission, distribution and storage capacities

The transmission mains carry water from the source to the water treatment plants and subsequently to the Master balancing reservoirs at Hydernagar, Lingampally and Singur. The trunk distribution mains transmit water from the balancing reservoirs to the reservoirs within the city. The total length of the transmission mains is about 286 Km, trunk mains is about 265 Km and length of the distribution system is 1727 Km.

The water distribution system for the MCH area is divided into 20 water distribution zones. The zones are further divided into 20-30 sub zones based on common ability and operational convenience. The total storage capacity available within MCH is about 390 ML comprising of 118 underground reservoirs and elevated

reservoirs. The present storage capacity is inadequate for the quantity of water supply available for the city.

5.11 Service coverage

The Goal of HMWS&SB is to provide safe and adequate drinking water to 100% of the projected population of Hyderabad metropolitan area. However, according to the HMWS&SB, 90% of population is covered with potable water supply in MCH area and 65% in surrounding municipalities. The city has over 3,87,532 water connections in MCH area and 1,94,600 connections in surrounding municipalities (see Table 5.4). Around 70% of the population has access to piped water supply in MCH area and is around 43% in surrounding municipalities. In addition to that, the city has 8353 public stand posts (PSP) for water supply to the weaker sections of society, who cannot have individual house connections.

Table 5.4: Connection details

Category	No Connections	Percentage of the total
Domestic	387,532	77.38
Slums	98,696	19.71
Commercial	13,451	2.69
Industrial	936	0.19
Others	194	0.04
Total	500,809	100.00

Source: Hyderabad Metropolitan Water Supply & Sewerage Board, www.hyderabadwater.gov.in

Table 5.5: Major parameters of water demand and supply in MCH area

% of households having individual tap connections	70%
Number of public working power driven bore wells	58
Number of public working hand pump bore wells	4859
Number of mobile tankers	250
% households dependant on stand posts	7%

Source: Hyderabad Metropolitan Water Supply & Sewerage Board, cited in City Development Strategy, Hyderabad 2004

5.12 Service indicators

The average per capita consumption of water is estimated at 162 Ipcd, but in slum areas it is estimated to be much lower. The residents in Hyderabad are supplied water for about 2 hours on every alternate day. However from November 14, 2008, some parts of the core city area is claimed to be supplied with daily water supply.[20] The surrounding municipalities are supplied for one hour every third day. However, the actual hours of water supply are not uniform throughout the city. For instance, according to Saleth and Dinar "areas of economic and political importance manage to get water for more hours than areas with less organized or dispersed pressure groups."[21] It is visible in Hyderabad that areas in the main city are supplied water regularly and the duration of supply is more than in the periphery and the poorer areas. As a result, water deficit is distributed unequally across regions and uses within the city limits.

Table 5.6: Water supply in Hyderabad-key indicators

	Indicators	MCH	Surrounding Municipalities
1	Network Coverage	90%	65%
2	% Access to Piped Water Supply	70%	43%
3	Average Per Capita Supply	162 lpcd	91 lpcd
4	Unaccounted for water	40% (est.)	60% (est.)
5	Duration of Supply	2 hrs alternate day/ some parts daily	1 hr third day
6	Connections/1000 pop	102	39
7	Average volume of water produced	162 Mgd	44 Mgd
8	Unit Production Cost	Rs. 14 /kl (Avg.) and Krishna Water – Rs. 18 / kl	
9	No. of PSPs	5092	3261
10	Water Tariffs Residential & Commercial Industrial	 Rs. 6/ – Rs. 35/ kl Rs. 35 / kl	 Rs. 100
11	Private sector involvement	Billing, collection, leak repair, maintenance etc	Partly

Source: Hyderabad Metropolitan Water Supply & Sewerage Board, cited in City Development Strategy, Hyderabad 2004, p.4

The water board claims that it is supplying daily water to the residents in Hyderabad. Although there is a fairly good level of access to water in the centre of the city, there are still differences in the level of supply and in the means used to get it in case of people living outside the core city areas. However, there are several instances published in the local dailies in Hyderabad, which states all is not well with water supply. People in the twin cities are forced to buy tanker water.[22] There are cases where people get water once or twice in a week, the duration of water supply is very less and the water pressure very low. Moreover the water supply timings are very erratic. This results in insufficient amount of water to meet the daily requirements.[23]

5.13 Water tariffs

One of the most important issues with water supply in Hyderabad is the water tariff. The people in Hyderabad who have meter fixed to their water connection in working condition are charged according to slab rate. With increase in water consumption one has to pay more (see Table 5.7). Those whose meters are not working have to get it repaired at the earliest or have to pay fine to the water board. The introduction of meters is supposed to inculcate a change in attitudes of people who started looking at supply as a paid public service. It is supposed to facilitate management at the higher level and make the public aware of the economic value of water.

Table 5.7: Existing water tariffs in Hyderabad

Category	Consumption of Water in Kilo Litre per month	Rate in Rs. per KL
(a) where the monthly consumption is 500 kl or less	0-15 15-30 31-50 51-100 101-200	6.00 8.00 15.00 20.00 25.00
(b) where the monthly consumption exceeds 200 kl	Entire consumption	35.00

Source: The Andhra Pradesh Gazette, Hyderabad, Friday, December 29, 2006

During the annual meeting, chief minister, Y.S. Rajasekhara Reddy, refused to hike the water tariffs.[24] The chief minister, who is also chairman of the board, agreed to provide a subsidy of Rs.50 crores to finance its operations. This gesture was apparently made possible by sharing a part of the development charges levied by the Hyderabad Urban Development Authority (HUDA), the Cyberabad Development Authority (CDA) and the Hyderabad Airport Development Authority (HADA).

5.14 Connection charges

The charge for getting a new water connection in Hyderabad is about 8,000-12,000. Such a high amount for getting piped water supply denies water access to those who cannot pay for it. On the other hand, the government in order to make water affordable to the poor had directed the water board to sanction new water connections to the poor households with a payment of Rs 1200 in equal instalments of Rs 100 for 12 months. The scheme was primarily to encourage people of lower income groups to apply for individual connections. This is against the normal charges of Rs 2400 for new connection. The differential amount is borne by the government. This policy was implemented in August 2004.[25] It appeared to be a success because 26,000 households have received water connections under the new scheme.[26]

However, the poverty line is set by MCH at Rs.24000 per annum or Rs.2000 per month. In this situation, Rs.1200 can be a substantial investment in addition to the payment of monthly charges for water consumption. Water tariffs are not based on concessional rates and are given on the basis of level of consumption. Therefore, the rate adjustments do not necessarily favour those who belong to poor group.[27] There is another dimension to providing access to water. In fact, connections can be given only to households in areas where this is physically possible and the area must be recognized by competent authority as being entitled to be provided with civic services. Since a number of slums are identified as illegal, they are not entitled to such schemes. Therefore, underprivileged localities are often subjected to differential treatment by the commercially-oriented services by HMWS&SB.[28]

5.15 Water demand and deficit

The extent of water deficit in a given city is usually defined by the gap between demand and supply. This indicates the degree of water crisis prevailing in the city. Hyderabad's current estimated demand stands at 290 Million Gallons per Day (MGD). But total installed capacity of water from the surface sources is about 245 Mgd. The estimated ground water extraction that supplements water supply is 25 mgd, which accounts to only around 270 Mgd supply. The water allocation to Municipal Corporation area is about 162 Mgd and for the ten surrounding municipalities is about 44 Mgd. This is made worse during the drought conditions, which constrict supply even further. As shown in table 5.8 a huge gap is indicated between current supply and demand, and this is likely to widen by 2021, when the estimated demand will grow to 400 Mgd.

Table 5.8: Projections of water demand and deficit in Hyderabad (in MGD)

Years	2001	2006	2011	2016	2021
Supply	153	162	162	162	162
Demand	230	290	328	360	400
Deficit	77	128	166	198	238

Source: Hyderabad Metropolitan Water Supply & Sewerage Board

Currently the water board manages the water deficit through a mix of supply hours manipulation and an informal and unequal rationing of the total water deficit across regions and use categories. On the other hand, people deal with water scarcity at their end by relying on a variety of water augmentation options depending upon their economic capability. These options range from investment in in-house storage system to the installation of their own bore wells and on purchased water from private tanker supply. However, since the poor people have limited options, their reliance on the water supplied by the water board is higher as compared to economically sound users.[29]

On Noverber 14, 2008 it announced that with availability of water from Krishns river it can supply 32 crore 80 lakh gallons water to meet the growing drinking water needs. It was estimated that an amount of Rs 830 crore was required to tap nine crore gallons of water from Krishna river to cater to the needs of municipalities around Hyderabad (since merged in GHMC-Greater Hyderabad

Municipal Corporation). Even before its completion the Government of Andhra Pradesh announced a scheme for diversion of Godavari water to the city to augment drinking water availability to the city at a cost of Rs. 4000 crores.[30] While plans are on across the state, there are disturbing reports of lack of access to drinking water not only in urban areas but large number of habitations. The following table reflects the deep crisis afflicting the policy on drinking water.

Table 5.9: Access to drinking water in Andhra Pradesh

Total Habitations	Access to water	Partial access	Nil access	Low quality
72095	33310	37394	479	912

Source: Culled from newspaper published in Hyderabad, May 6, 2009.

The above information is made available to the media. It needs to be mentioned that while in 2007 the number of habitations that received full fledged water supply is mentioned as 39512. It makes one wonder why the number got reduced to 33310 while the budgetary support shows that Rs 600 crores is allocated to new schemes for augmenting water supply across the state. This was in addition to the new initiatives taken by the board in order to provide better service delivery to the people. Few new initiatives by the board can be discussed here.

5.16 New initiatives by the HMWS&SB for better service

Various reforms were undertaken in the late 1990s with regard to the water board's functioning in order to enable the board to serve efficiently. Broadly these initiatives were intended to better serve the people, however sometimes they ended up becoming more complex in functioning.

5.16.1 Metro Customer Care (MCC)

MCC was launched in February 1999 as a new department (open round the clock) in the HMWS&SB head office. An important innovation was the setting up of a computerized complaint centre. Complaints are transmitted to the different divisions and sections through the computer network. The office can receive up to 500 complaints per day. It should be pointed out that the number of complaints is now much higher in the central parts of the city than in the outlying areas.

5.16.2 Single Window Cell (SWC)

SWC was set up in April 1999 as a new department based in the HMWS&SB head office to receive, process and coordinate all applications for new water and sewage connections. As for the SWC, although it has become easier to submit an application for a new connection, it has been observed that it is not always easy for people living in outlying areas to make the trip to the Board's head office. The procedure is all the more problematic since it is often necessary to make several trips before an application is accepted.

5.16.3 Citizens' charter

The third reform intended for users, undertaken by the HMWS&SB in the late 1990s, was the introduction of a Citizens' Charter in January 2000 for laying down computable norms for implementing a wide spectrum of services.

5.16.4 Lok adalat

The Lok Adalat was set up in 2000.[31] The objective was to hold regular meetings during which unresolved disputes, particularly those awaiting a decision of the court for a long time, are likely to be amicably settled. This practice was still in use in 2006 as announcements were published in daily newspapers inviting people to the Lok Adalat for getting their grievances redressed. For example, the Permanat Lok Adalat for Public Utility Services conducted a special water adalat for people having grievances regarding improper billing, non-supply of adequate water and other related complaints.[32]

5.17 Effort towards private participation

The HMWS&SB is actively considering to privatise the operation and maintenance and distribution of water supply in the erstwhile municipalities. The HMWS&SB has already privatised few of its functions such as bill collection, meter reading and maintenance. There was a bigger plan to privatise water supply in Hyderabad but owing to pressure from different groups such as the Communist Party, the plan is abandoned now.[33] The initiative to involve the private sector is in

accordance with the loan agreement with the World Bank. One of the objectives for the water supply project in Hyderabad says, "developing the HMWS&SB into an effective commercially oriented water utility capable of sustaining the delivery of such services."[34] Under the agreement, the HMWS&SB is free to increase water tariffs in order to attain full cost recovery.[35] Therefore, the HMWS&SB it appears is more interested in the management for financial stability rather than basic service delivery.

In addition to the involvement of private parties in fixing water meters, HMWS&SB has started outsourcing its operations while keeping major decision-making powers in its own hands. Particularly as part of its efforts to recover unpaid bills, downstream operations at the consumers' end have been outsourced to private agencies. Starting from August 2006, about 50% of the job of distributing bills has been outsourced.[36] Four agencies AP Online Services, Excel Computers, Sri Rami Reddy & Co and Bhavani, have been selected after calling for tenders and their remuneration varies from zone to zone (from Rs.2.79p to Rs.4.00p per bill). The main clause in the contract is the monthly distribution of bills.

It is quite clear that treating water as an economic good (payment for water by volume being accepted as a norm) has coincided with the outsourcing of some operations and maintenance functions. These policies are expected to improve the Board's financial condition by increasing its income and optimizing its expenditure. The strong influence exerted by international institutions such as the World Bank is also evident. The introduction of benchmarking and the practice of taking the assistance of the private sector are recurrent themes in the reforms proposed by these institutions and the subsequent introduction by the HMWS&SB.[37] This process got slowed down with the change in regime in Andhra Pradesh. During the earlier Telugu Desam Party (TDP) government under Chandra Babu Naidu, the state governments' actions were tuned to the voices of the World Bank. However, the Congress government under Rajashekhar Reddy has resorted to more populist policies making the process slow.

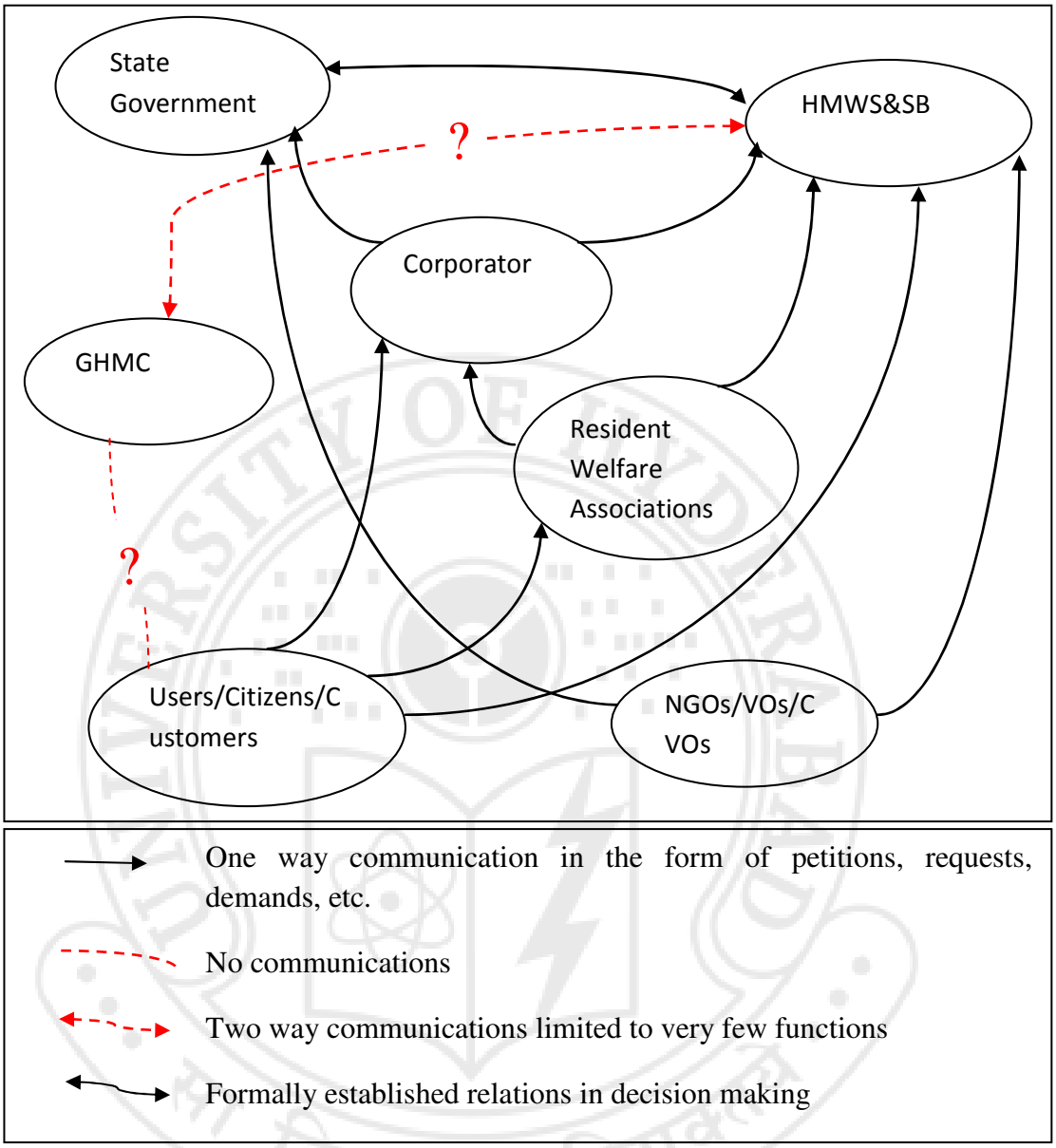
On the other hand, the HMWS&SB has launched its own packed water called *Metro Water* on April 14, 2009 from the newly established water plant in Asif Nagar filter premises. The plant is established on a pilot basis and the water cans would be

initially given to Government Departments and institutions. Subsequently plans are on to supply water to the people.

5.18 Role of different stake holders and access to drinking water

There are numerous institutions involved in the process of water decision making. Though the water board is mandated through an Act of state legislature to provide drinking water to the citizens, however the local government i.e. the municipal corporation is constitutionally empowered to perform the water supply functions. In case of Hyderabad, the municipal corporation has very limited functions with regard to water supply to the citizens. Even the mayor and the councillors are not members in the HMWS&SB.

Figure 5.3: Decision making, the role of citizens and access to drinking water



Corporators, elected for a five-year term, are in charge of the development of their electoral constituencies. Together with MLAs (Members of Legislative Assembly) and MPs (Members of Parliament), they constitute a General Body which meet once in six weeks. These representatives are involved in water access issues. The role of municipal corporators in the area of water supply seems to serve essentially as buffers.[38] Distribution of duties is not dictated by official rules but rather takes the form of informal arrangements. For example, interaction between

individual corporators and HMWS&SB depends on various factors such as personal relationships, party affiliations, political tensions surrounding the issue of water, expectations of the population, etc. Therefore, the representation of his or her role differs from one stakeholder to another.

Together with the proposals forwarded by municipal corporators, which are studied and most of which are included in the plans drawn up by the water board, the latter also plan additional projects to fulfil what are in their view complementary requirements. Even though the corporators are not part of the formal decision-making bodies, as people's representatives they are involved in urban governance and are in contact with the administration at the municipal level for the resolution of day-to-day problems.

5.19 Role of market agencies in access to water

The water demand in Hyderabad has assumed alarming level. It appears that the water board is unable to meet the ever increasing demand for water. As a result there is several private water service provider providing water by way of packaged water, canned water or tanker water. The water market has proliferated in the city at an alarming level and their rise in the past few years is phenomenal. One can find in the city, there are several water service providers providing potable water in 20 litres cans for a monthly charge. For such a service one has to take a monthly coupon and pay at the end of every month. Such instances has increased at an alarming level taking cue from the water boards inability at times to supply adequate water of sufficient quality to the people.

When the *Dial a tanker* scheme was launched in September 2004, the board used to make about 300 trips per day. However, it has increased to 5000 trips a day (which includes 2000 free trips to slums and 3000 paid trips) by April 2005.[39] The demand for drinking water in the city has reached an alarming level when the private water tankers are also finding it difficult to meet the demands.[40] Armed with the huge demands from the public, the private tanker owners are flouting all norms and legal procedures to meet the demands and make quick money. For example a new item published in local news paper found that domestic bore wells on the back side of

Kapra lake are being used incessantly to draw groundwater for domestic and commercial use. This is in contrast and blatant violation to the provisions of the Andhra Pradesh Water, Land and Trees Act 2002.[41] The Act gives high priority to protecting drinking water sources and bans sinking of bore wells within 250 meter from existing drinking water sources without permission.

There are areas in the city of Hyderabad such as Nampally, Trimulgherry and Amberpet which are safe havens for the private tanker owners to draw unlimited groundwater and sell it for a higher price.[42] As it is discussed earlier, people who have capacity to pay are buying water from the private sources to meet their needs.

5.20 Role of CSOs / VOs in access to water

Different civil society organisations and voluntary organisations are also playing an important role for people's access to drinking water. The organisations through petitions, public hearings, campaigns and press meets has in the past put enormous pressure on the HMWS&SB as well as the government in matters of better water supply. In addition, they put pressure on the government not to hike the water tariffs which in turn will deprive the poor people of their access to water.

Forum for a Better Hyderabad is a coalition of civil society organizations and individuals in Hyderabad. It was formed under the banner of *Hyderabad Bachao* (Save Hyderabad), when some of the non-government organizations and citizens, concerned about environmental and developmental issues in and around Hyderabad city, came together in 24th June 2000. The main focus of the Forum is on advocacy of sustainable development, by highlighting the economic and ecological impacts of environmental problems likely to be created by the developmental activities being undertaken without proper appraisal and assessment.

The Federation of Association of Colonies and Apartments (FACA), has opposed the board's move to consider each flat a unit while levying water charges. FACA had plans to go for mass agitations and signature campaigns while putting pressure on the board against charging flats on deemed supply of 15 Kilo Litre (KL) of water.[43]

The HMWS&SB has of late started public suggestions meet. Interestingly the public suggestions meets are aimed at seeking new approaches to improve revenue collection, from the Resident Welfare Associations as well as the slums.[44] The first public meet was inaugurated by the Minister for Municipal Administer and Urban Development, who appealed for increased public participation and cooperation to the board. It is interesting to note that, the state government as well as the board now felt the need of public participation while there is no provision made in the board's act for public participation.

Except for a few exceptional individuals deeply involved in the affairs of civil society organisations, ordinary citizens seem to make little use of the platforms available for debating the pros and cons of municipal policies. All they want is good service for their home. They use both individual and collective levers in the form of complaints and demands regarding their immediate surroundings. All these individuals play a pivotal role by forming a local neighbourhood network, which can be divided along communal or political lines. This allows people to voice their needs. Hence, belonging to a community and the existence of a network of relationships with neighbours can be an important factor in determining the quality of service because it leads to the generation of common complaints entered in the section's register. In the case of low-income households, contiguity of dwellings is likely to give rise to common problems and hence to the emergence of common demands/complaints.[45]

In view of the multiplicity of agencies that handle city services, lack of inter-departmental coordination has been the single biggest difficulty plaguing municipal governance. These conflicts have surfaced between GHMC and HMWS&SB on prorities, funding and maintenance of works in matters of water supply. Reforms in water sector appeared not to have focussed on serving all, especially the poor and have become a privatisation or private sector participation initiatives. Public stand posts are removed denying water to the homeless while no effort is made to plug leakages and to better target subsidies and take them away from the rich. The water board on the other hand has taken a commercial approach to water supply and is more interested in revenue generation than serving the people. For example, there are provisions in the water supply rules of the water board, that a household can be

disconnected with water supply if the amount of the bill, either exceeds the amount paid as deposit or is not paid within the time fixed. Such disconnected water supply can only be reconnected on payment of all the arrears due to the board together with the disconnection charges and re-opening fees.[46]

There are also provisions when the water board charges fine from the people wastage or misuse of water supplied by the board. For example, a person can be charged Rs 1000 as fine if he is found using water supplied for domestic purpose for non-domestic use. Simultaneously, the misuse or wastage of water supplied by water board is charged with Rs 200 fine. Though such initiatives help conserve potable water from getting wasted however implementation of such rules appeared to have been misplaced.

The present chapter discussed the provisioning of drinking water to the people in Hyderabad. The HMWS&SB in Hyderabad has taken several initiatives in accordance with the government's policy to provide potable drinking water to all. However, the ever increasing population and the rapid pace of urbanisation in Hyderabad is a challenge to the HMWS&SB's initiatives. Consequently the HMWS&SB's ability to provide adequate quality water to the people it appears has been compromised. This has fuelled the private players in the form of packaged water and tanker water supply to proliferate rapidly. On the other hand, the civil society organisations and the voluntary organisations in the city have continuously campaigned putting pressure on the HMWS&SB as well as the government for better water delivery to the people. The discussion also highlighted the absence of people's representatives not being a part of the HMWS&SB and the very little role played by Hyderabad Municipal Corporation has made water supply in Hyderabad a techno-bureaucratic activity. The next chapter deals with the survey regarding people's access to drinking water in Hyderabad and their level of satisfaction with the present water supply set up in Hyderabad.

[1] *City Development Strategy,* Municipal Corporation of Hyderabad, Hyderabad, 2004. Also see www.ghmc.gov.in .

[2] The municipalities are; L.B. Nagar, Malkajgiri, Quthbullapur, Patancheru, Serilingampalli, Kapra, Kukatpally, Ramachandrapuram, Uppal Kalan, Alwal, Rajendranagar, Gaddiannaram

[3] The metropolitan area of Hyderabad was notified under the Andhra Pradesh Urban (Dev.) Act 1975 and termed as "Development Area". This consists of the Municipal Corporation of Hyderabad (MCH), 10 municipalities and a vast area under Gram Panchayats. In order to plan for this composite area, the Government of Andhra Pradesh constituted on 2nd October 1975, the "Hyderabad Urban Development Authority" which is the planning authority for Hyderabad. HUDA has prepared two master plans and 20 Zonal Development plans for this area of which one master plan and 18 Zonal Development plans are already notified by law and in force. HUDA is entrusted with planning, regulation, control and coordination of urban growth (CDS 2004, www.huda.gov.in).

[4] The notification to this effect was issued by the Government of Andhra Pradesh vide GO Ms no 274 MA 20-4-07.

[5] This expansion does not make any changes to the jurisdiction of Hyderabad Airport Development Authority, Cyberabad Development Authority and Buddha Purnima Project Authority. When the Government constitute a full fledged Hyderabad Metropolitan Development Authority a view will be taken with regard to the above three UDAs which are basically functional units.

[6] There was a clear cut difference between the jurisdiction of Municipal Corporation of Hyderabad (MCH) and the ten municipal towns those are surrounding MCH. These ten municipal towns were independent of MCH in their functioning and even had their separate water supply system. Hyderabad Metropolitan Water Supply & Sewerage Board (HMWS&SB) only supplied bulk water to the municipal towns and levied a certain amount for the same. The municipal towns themselves were responsible for the distribution in their municipal jurisdiction. These ten municipal towns got merged with the MCH and led to the creation of Greater Hyderabad Municipal Corporation (GHMC) in 2007.

[7] --- *Glimpses of The Nizam's Dominions,* (published by special permission and under the direct patronage of His Highness The Nizam's Government), C. B. Burrows, Bombay and London, 1899, p.184.

[8] M V Naidu, (ed), *City of Secunderabad (Deccan),* Secunderabad Municipal Corporation, 1955, p.27.

[9] Naram Krishna Rao, "The Capital City's Water Supply: A Well Crafted Tragedy", *News Letter*, Forum for a Better Hyderabad, Hyderabad, 2008, p.38-39.

[10] Ibid.

[11] Ibid.

[12] At this point, there was demand from the enroute villages to supply water to them for drinking purposes from the two water supply schemes (Rao 1989: 120).

[13] Government of Andhra Pradesh, Municipal Administration and Urban Development (UBS) Department, G.O.Ms.No.397, M.A, 25.09.2004.

[14] Interview with First Chairman, Hyderabad Metro Water Supply and Sewerage Board (HMWS&SB) on July 04, 2008.

[15] Interview with Manager, Adikmet, Sub-Division no-III, O& Div no-V, HMWS&SB, Hyderabad, July 23, 2009.

[16] Op cit, no. 14.

[17] Loan No 3181 IN, International Bank for Reconstruction and Development, Washington D.C, May 1990. Available online at http://www.worldbank.org/

[18] With the creation of GHMC, all the municipalities were merged into the earlier MCH. Participation of private sector in water distribution and operation and maintenance functions in these municipalities is actively being considered by the HMWS&SB.

[19] R. Maria Saleth and Ariel Dinar, "Satisfying urban thirst: water supply options and pricing policy in Hyderabad city", *World Bank technical paper no-395,* the World Bank, Washington D C, November, 1997, p.6.

[20] Supplying water daily to the people of Hyderabad has been a longstanding promise of the government for the past several years.

[21] Op cit, no. 19, p.12.

[22] *The Hindu,* (a national daily published in Hyderabad), December 17-18, 2008.

[23] *The Hindu,* December 19, 2008.

[24] *The Hindu,* "YSR rejects Water Board's proposal", August 9, 2006.

[25] *The Hindu,* "Development to include urban poor, says Minister", August 20, 2004.

[26] Agnès Huchon and Guillaume Tricot, "Between Citizens and Institutions: the Dynamics of the Integration of Water Supply and Sanitation Services in Hyderabad", *CSH Occasional Paper no 22,* 2008, p.36.

[27] Ibid, p. 43.

[28] Ibid, p. 46

[29] Op cit, no. 19, p.13.

[30] The project to bring Godavari water to the city for drinking purpose would be implemented in three phases. The phase I with a cost of Rs 4000 crores is expected to be completed by 2011 bringing 120 MGD water to the city.

[31] *The Hindu,* "HMWSSB sets up Lok Adalat", November 10, 2000.

[32] *The Hindu,* August 28, 2008.

[33] Interview with First Chairman, Hyderabad Metro Water Supply and Sewerage Board (HMWS&SB) on July 04, 2008.

[34] India- Second Hyderabad Urban Water Supply and Sanitation Project, Report no. 5895, October 1997, the World Bank, Washington D. C. available online at http://www.worldbank.org/.

[35] Op cit no. 17.

[36] *The Hindu,* "Monthly water billing from today", August 1, 2006.

[37] Op cit, No. 26, p.22.

[38] Op cit, No. 26, p.24.

[39] *The Hindu,* April 16, 2005.

[40] *The Hindu,* July 18, 2008.

[41] The Andhra Pradesh Gazette Part Iv-B Extraordinary, Published By Authority, [No.11] Hyderabad, Friday, April 19, 2002.

[42] *The Hindu,* July 18, 2008.

[43] *The Hindu,* August 14, 2008.

[44] *The Hindu,* July 29, 31, 2008.

[45] Op cit, No. 26, p.22.

[46] Water Supply Rules, the Andhra Pradesh Gazette, (No.36) Hyderabad, Thursday, October 25, 1990.

Chapter - 6

Provisioning for Drinking Water: A Case Study

It is seen in the earlier chapter how water supply to Hyderabad increased to meet the growing needs of the city due to rapid urbanisation and phenomenal increase in population. This called for policy options from the state agencies. An attempt is made in this chapter to analyse responses of sample about the supply of drinking water to them in a selected locality. It is divided into two sections. The first is a description of the instrument (interview schedule) and the universe. The second presents an analysis of the data again in three parts. While part one deals with the analysis of data from the independent households having piped water connection, two deals with slum households with independent house service connection. Part three is an analysis of the data from slum dwellings without individual water service connection.

An interview schedule (see Annexure -1) is administered to the selected sample at the household level. To supplement the information and for covering the uncovered aspects three Focussed Group Discussions (FGDs) are organised with the selected respondents. This served the purpose of verifying the data besides discussions and interviews with several HMWS&SB officials and observation method is used especially at times when water gets released. On the other hand, descriptive statistics is applied to analyse the data collected. Study is conducted for 107 days from March 2008 to August 2008.

6.1 The Sample

Adikmet is one of the densely populated areas of the twin cities. It consists of about 5000 odd households which can be divided into independent houses / flats and apartments, slums and makeshift slum dwellings. With regard to water supply, there are two kinds of user households; one, household and slum dwellings with individual house service connection and two, households particularly slum dwellings with no piped water provision. Therefore, the sample for the study consists of households and

slum dwellings with individual water connection and households without individual house connection.

The researcher has chosen stratified sampling method. The target groups are divided into three categories, i.e. independent households, slum households with individual water connection and slum dwellings without individual water connection. The sample for the first two categories is 5 per cent of the total number of households consisting of 250 households chosen for the study. The 250 sample in this category consists of independent flats as well as slum dwellings that have individual water service connection. Once the total number of sample is fixed, it was proportionally divided according to the percentage of each category of habitations. Thus, 136 independent flats and 78 slum dwellings are chosen comprising of 64 percent and 36 percent of households respectively with water connection in Adikmet.

On the other hand, there are about 400 houses which do not have individual house service connection, all in the slum dwellings. Initially 5 percent of sample consisting of 20 slum dwellings was taken for this category. However, since most of the people are rag pickers and many of them daily wage labourers, it was difficult to find and interact with them even after repeated visits to the chosen dwellings. Due to their non-availability, the sample size was increased to 10 percent consisting of 40 dwellings for a wider coverage.

Before selecting the exact sample systematic sampling is applied. Listing of all households is done in Adikmet. In the category of houses having piped water connection, after listing of households every 50^{th} household is chosen as the sample. Though the estimated sample is 250, the actual sample is 214. The sample 250 is without replacement sample so there is non-coverage of about 36 houses. This is because the houses were found locked and several visits to the house did not yield any result.

On the other hand, the same procedure was followed in the slum dwellings without individual water connections and every 10^{th} dwelling is chosen as the sample. Though the estimated sample is 40 in this category, the actual sample is 32. It is

without replacement sample and there is non-coverage of about 8 dwellings which resulted due to the non-availability of the people even after several visits.

Therefore, the total number of estimated sample for the study is 290. But the actual sample studied is 246.

6.2 The interview schedule

The objective of the interview schedule is to elicit details on quality and adequacy of water availability and its accessibility. The interview schedule administered to the sample is divided into three sections. The first section of the interview schedule is common for all and is primarily intended to elicit information about the socio-economic background of the respondents. It consists of nine items questions with sub-question wherever necessary. Details of the socio-economic profile of the households are recorded. It begins with the family size, occupation and income, the typology of housing or whether the interviewee is a renter or the owner. An attempt is made to know the number of sub-units in the same complex and in case of apartments the floor the interviewee resides.

The second section consists of 13 items questions with sub-questions wherever necessary and deals with the water supply to the residents. This section of interview schedule is intended for the sample having individual house service water connection. In this section respondents were asked questions relating to the kind of water supply they have. For example, the respondents were asked if they have a municipal water connection and how much they had to *pay* in order to get a water connection. They were also asked about the details of the water supply in terms of duration of supply (i.e, hours per day), supply timings, quantity, pressure and quality of water supplied. This was followed by questions relating to additional arrangements people have made in order to make their water availability safe. For example, the extent of usage of mechanisms such as overhead tank, base tank, motor, bore well, tanker water, filters, mineral water was asked. The questions followed this was relating to the customer grievances in water supply and the promptness on the part of the HMWS&SB to attend to such grievances. The next question dealt with the monthly water charge the respondents get. It stated with whether their water connection is metered or not and if

they are charged on meter rate or flat rate. It also tried to find out whether the HMWS&SB checks the meter accuracy and how frequently to see that people are not charged exuberantly.

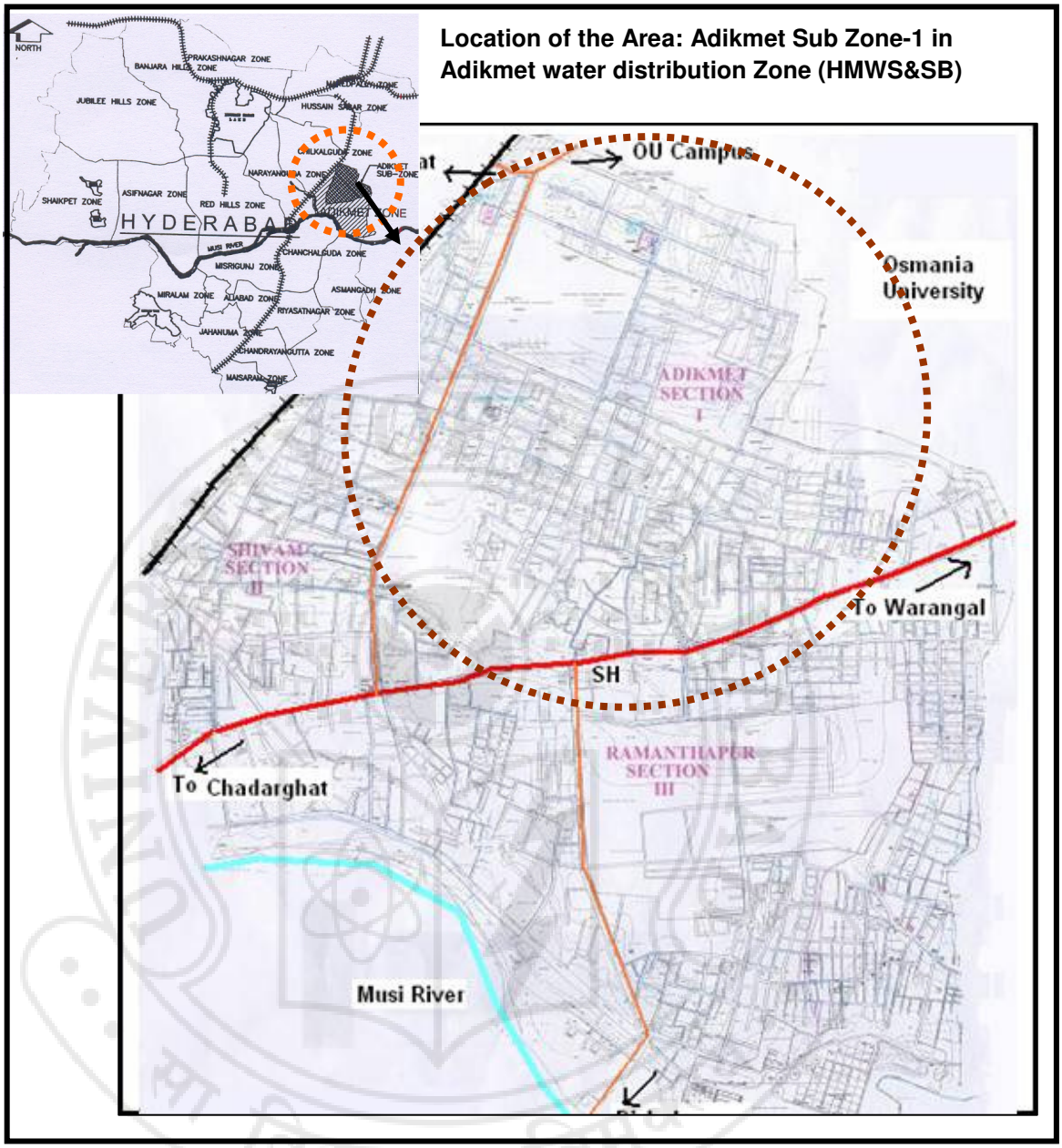
The third section of the interview schedule is for the households without individual water connection. It consists of eleven questions relating to the respondents access to water. Since they do not have individual connection, questions are relating to their source of water, the quantity of water they get, whether it meets their requirements or not and if the water meets CPHEEO norms. Again questions also relate to if there is anyone making their case for access to water, what is their interest and what role do they play for securing water for the basti people.

The next section presents a description of the study area.

6.3 The area of the study

The area selected is Adikmet Sub Zone – 1 of Adikmet Water Supply Zone (O&M Division no – 5 of HMWS&SB). It is located in the eastern part of the Hyderabad city and is surrounded by Osmania University in the north and northeast side, Ramanthapur Main road in the south, Shivam main road in the west (see Figure 6.1).

Figure 6.1: Location of the survey area



Source: Adikmet Section office, Hyderabad Metropolitan Water Supply & Sewerage Board, Hyderabad.

The total number of individual water connections in the area is 4900 at the time of survey (during March 2008 to August 2008). Out of the total 4900, 4792 were domestic connections, 107 commercial connections and 1 bulk connection. There are 37 Public Stand Posts (PSPs) in the area for the convenience of the poorer section and usage of the people having no water connection. According to the HMWS&SB there are about 125 houses in the slums having no water connections. These houses were primarily dependent on PSPs and other private sources.

The norm for water supply according to the Manager, Adikmet Section is fixed at 40 gallons, i.e. about 152 liters per day per person. While designing the infrastructure for water supply, the HMWS&SB follows this norm. It is interesting to note that the Manager who is responsible to deliver water to the people, does not know who fixed this norm neither he is aware about what should be the ideal amount of water a person should get everyday. However, according to the Manager, HMWS&SB supplies 27 lakh gallons of water per day to Adikmet Section-I assuming the total population of Adikmet as 55,000.[1] In that estimate each person in Adikmet is supplied with about 49 gallons or about 185 liters water per day. This is the base figure of water supply without deducting the transmission and distribution losses. Though the amount of unaccounted water for Adikmet is unavailable, for the entire HMWS&SB water supply, it is estimated to be 40% of the total supplied to Hyderabad. In this case the actual water delivered to the people is much lower than what is claimed. It is also lower than the norm of water supply.

In addition, of the total 27 lakh gallons water supplied to the people in Adikmet, only 11 lakh gallons are accounted and paid for by the users even though 70% of the people in Adikmet pay their water cess regularly.[2] On the other hand, there are about 37 PSPs in Adikmet (earlier it was 57). The Hyderabad municipal corporation pays for these PSPs. For the total PSPs in Hyderabad (numbering 5092), the municipal corporation allocates 7% of the property tax collected to the HMWS&SB. At the time of submission of this thesis, the percentage has been increased to 25% of the property tax. The next section summaries the outcome of the household level survey.

6.4 The survey findings

At one segment of Adikmet independent houses and the apartments are concentrated while the slum settlements are concentrated on the other but there are also few independent houses in the slum settlement. It is noted that water is supplied on alternate days.[3] There are 70 internal valves operated during each supply day in the area. In addition most of the respondents turned out to be women as the male members are out of home for job or business during day time. Results of survey follow.

6.5 Independent households

A total of 136 people in the independent houses / flats were interviewed during the survey. It is found that majority of the residents in Adikmet fall in the category of independent houses 64 percent and they belong to upper middle or higher income group. Since majority of them are the permanent residents, they have made permanent arrangement for water security. Almost half of the respondents have bore wells in their houses to meet additional water requirements. Many of the respondents are also found to be buying tanker and mineral water for additional requirements. It is generally observed that the residents are in general dependant on piped water supply for drinking purpose only and rest of their requirements come from the private source such as bore well. In another major observation, majority of respondents stated that the quality of water supplied by water board is clear. However, it appeared their opinion is based on the appearance of water because the respondents are found to be using several techniques such as filter or water purifier and many boil water before they consume. One can conclude here that people doubt quality of water. The results are shown below.

6.5.1 User composition and socio-economic profile

In Adikmet the major source of household income for 72 percent of the respondent households was found to be either family business or private job (see Table 6.1). Twelve percent of the respondents are engaged in a government job while 16 percent are retired employees.

Table 6.1: Sources of income

Sl No	Sources of income	% of Respondents
1	Business	41
2	Private Job	31
3	Govt. Job	12
4	Retired	16

Almost all the respondents responded multiple sources of income; i.e. more than one member in the house. They belong to either middle class or higher class income group. This is further reflected in the occupancy status of the households. Again it is seen that 89% of the respondents from the independent houses are owners.

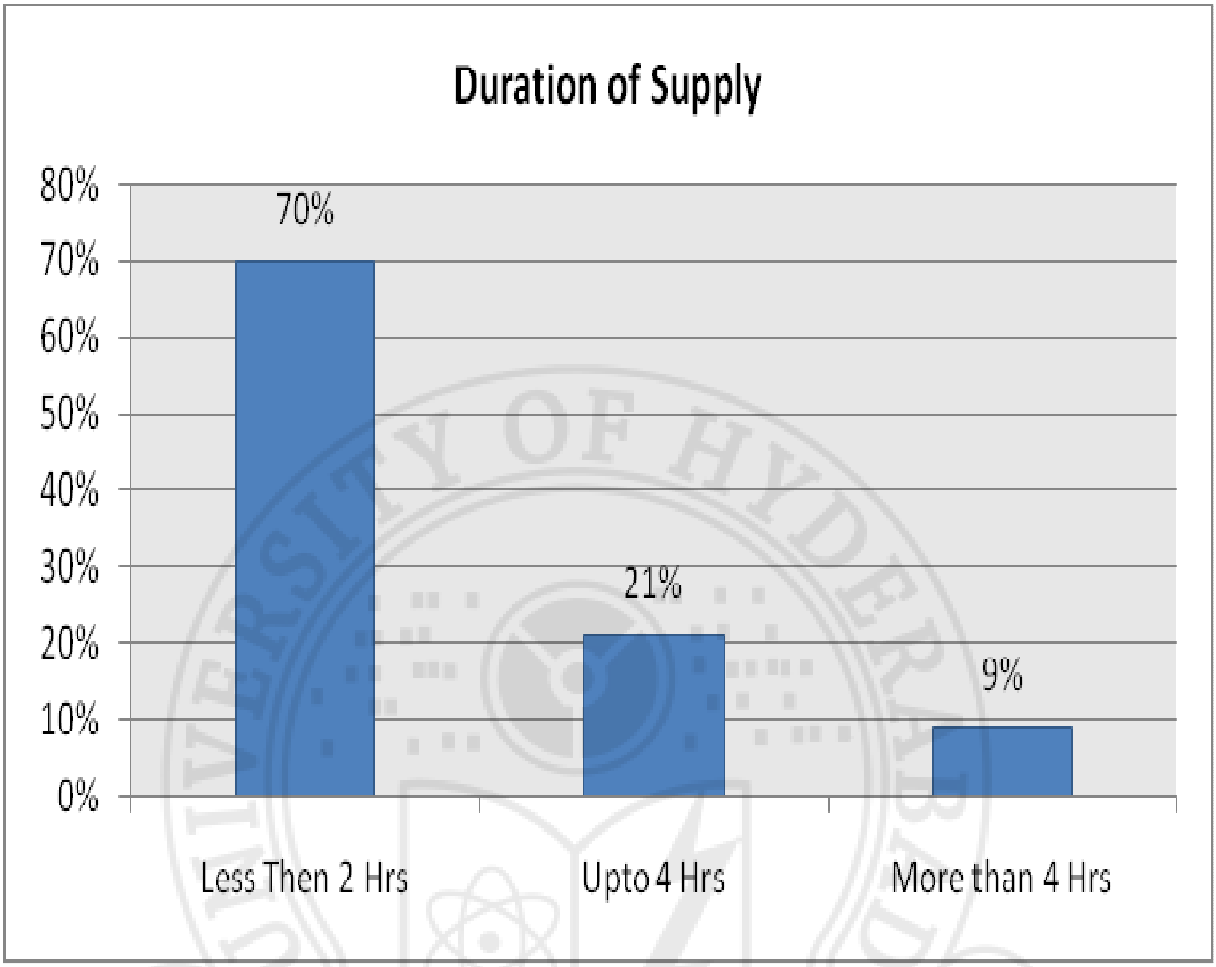
A majority of the respondents i.e. 79% share the same premise with one or more sub-units or family. Simultaneously 21% houses have more than four families sharing the same premises. As a result their usage and demand for water is much higher. They do not get water according to their demand hence have to get water from other sources.

6.5.2 Water supply

On the adequacy of water in terms of quality and quantity to the people, it is observed that water is supplied in every alternate day for a limited time. In addition there are houses where more than one family share the limited amount of water supplied.

With respect to number of water connections, most of the respondents 68% have one household connection while 30% of the respondents in the sample have two and 2% have three water connections. As more than one family is residing in the same house, more water is consumed in the independent houses. Consequently in order to meet the additional demands, 30% of have two household water connections. It is also important here to note that the duration of supply is limited making the issue of sufficient water availability complex. It is observed that there is no uniform duration of water supply in independent houses/ flats (see Figure 6.2).

Figure 6.2: Duration of water supply (Hrs/alternate day)

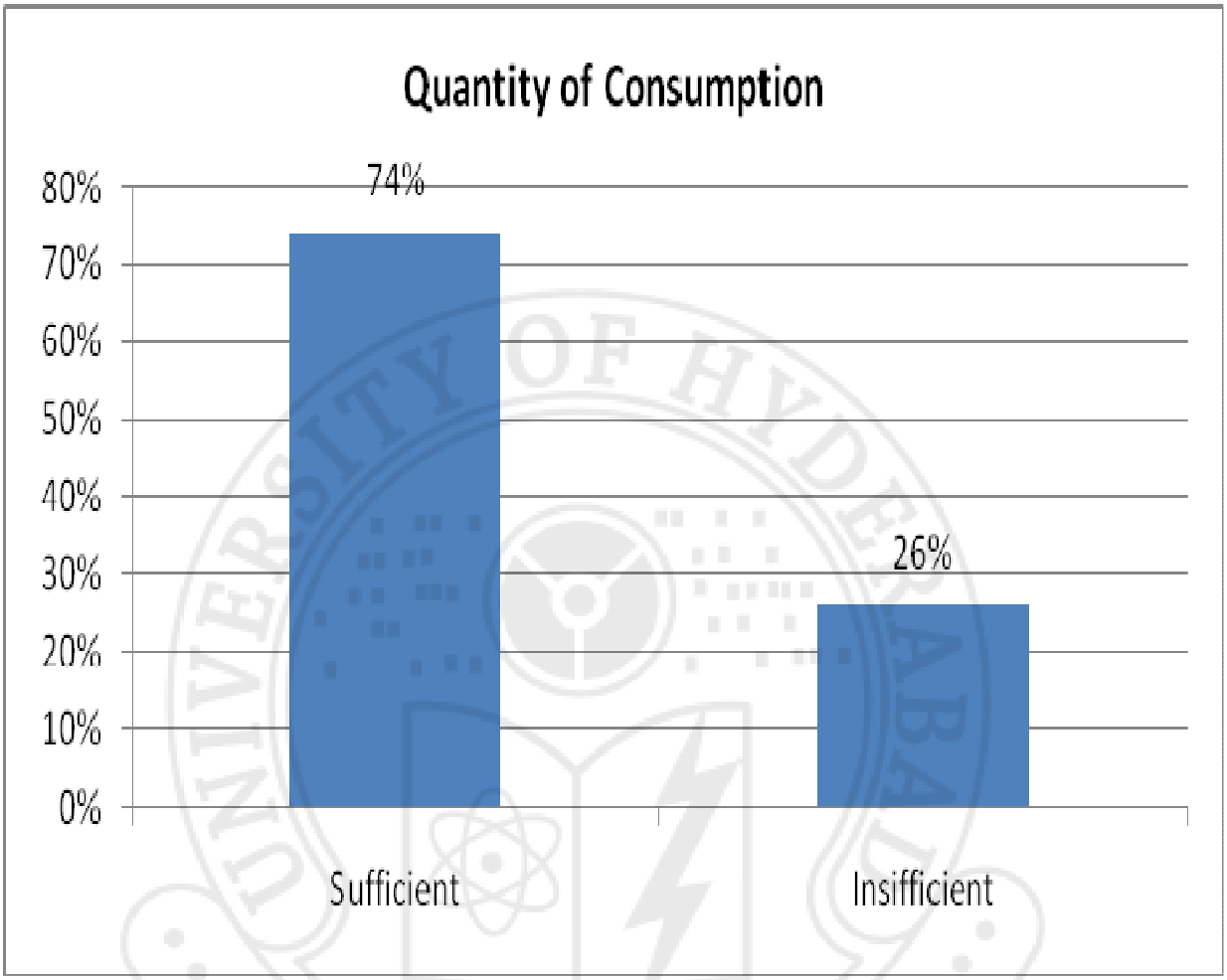


It may be mentioned that there is linkage to the topography of the area and the water that is used by respondents. South of the area under study is low lying and is at the tail end of the supply line. As a result the houses located in this part get water for more hours. The researcher is curious to know whether the fixed timings for the release of water are observed or not or whether the water supply is erratic without proper information to the respondents in advance. While majority of the respondents replied they get water very early in the morning however, they are not informed in advance regarding the changes in supply timings. As a result sometimes it becomes difficult for them to wait for water to come.

When it comes to the quantity of water about 74% of the respondents said they get sufficient water for consumption (see Figure 6.3). It must be mentioned here that

as indicated earlier, there are 32% respondents possess two or more water connections.

Figure 6.3: Quantity of consumption



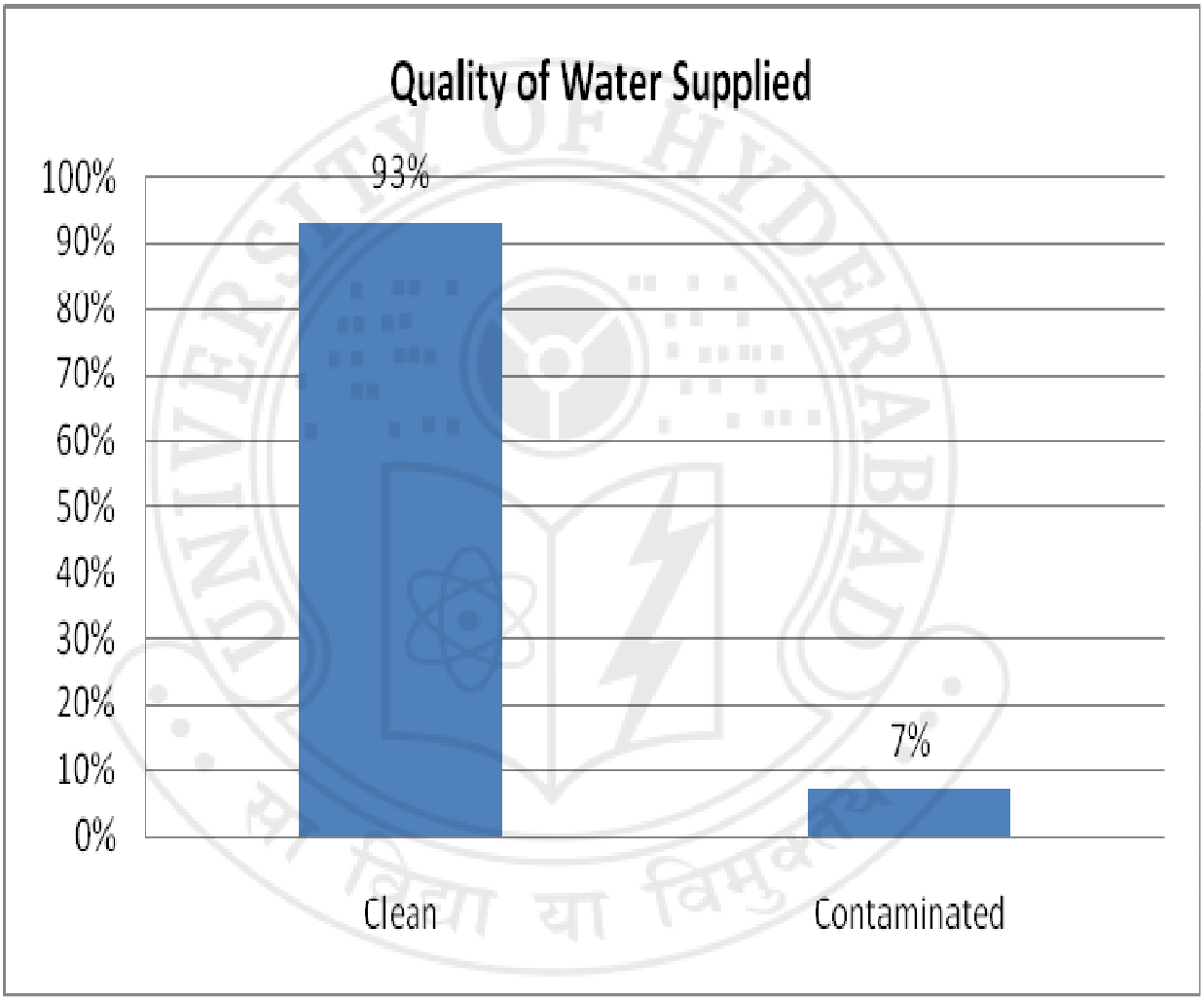
In addition to existence of multiple water connections, it is observed that the residents access private sources like tanker, borewell for water supply to meet additional demands. While 52% of the respondents have bore wells in their houses, 17% respondent reported buying of a tanker. The inability of the HMWS&SB to meet the growing demand for water from the people is reflected in this. It also shows the penetration of market mechanisms in water delivery.

In addition the respondents tap other sources including overhead tank, base tank, and big containers for storing water in order to secure their water accessibility. It may be mentioned here that water supplied to them is not always sufficient and due to

low pressure supply, people of the locality have different mechanisms to store water such as big containers 62% respondents, 92% respondents use overhead tank and 87% make use of base tank. Whenever there is scarcity or shortage in water supply to their houses, they make use of these mechanisms to cope with immediate shortage.

When comes to quality of water, majority of respondents (93%) in the area feel that they receive clean water (see Figure 6.4).

Figure 6.4: Quality of water supplied



However, many of the respondents reported usage of different mechanisms such as filter and boil water before consuming. While 66 per cent respondents use filter water, 27 per cent prefer to boil before consuming. In a significant finding 7 per cent respondents prefer mineral water instead of piped water supply for drinking and cooking purposes. Respondents reported that since they are unsure of the quality, they

prefer using a filter or boil it. It is significant to mention that though majority of the respondents said that they get clean water, however, it appeared their response was based on the colour of the water. This explains why respondents either boil or filter before consuming it.

6.5.3 Water charges

An overwhelming majority of respondents (98%) pay their user fee on meter rate. When asked about the monthly water charges 26 per cent respondents revealed that they pay below Rs 100, 49 per cent pay between Rs 100 to Rs 200 and 20 per cent pay more than Rs 200. It was also observed that 8 percent of the respondents pay more than Rs 300 per month. It is important here to mention that those respondents particularly who pay more than Rs 200 felt that they are charged highly because of the faulty water meters. This at times has led to unnecessary confusion and conflicts between the people and the HMWS&SB officials.

Though the respondents have complained about the issues to the officials, they seldom come as recorded from 35% of the respondents. It was found that for the 35% respondents meter accuracy is not checked by the HMWS&SB officials. Though meter is not working properly, no action has been taken by the HMWS&SB officials even with continuous complaints.

6.5.4 Grievances of water users

The focussed group discussion with users picked up randomly revealed different perspectives on this issue. Of those present nearly 60 percent reported insufficient and low quality of water, low pressure, faulty meters, variations in supply timings, irregular and odd timings of water supply, etc (see Table 6.2).

Table 6.2: General problems in water supply (are summed up for clarity)

Sl.No	Problems in water supply	% of Respondents
1	Insufficient quantity	17
2	Contaminated	17
3	Low pressure	18
4	Faulty meter	2
5	High user charges	2
6	Too early to get up	3
7	No problem	41

It should also be mentioned here that 41 percent respondents reported no problem with the supply. On the other hand, among those having supply related problems, 73% of the respondents are reported to approach the HMWS&SB. About 8% respondents approach private agencies while the rest 19% try to solve their problem themselves.

It is important here to note that many respondent said HMWS&SB officials take lots of time to solve their water related problem. About 49% respondents get their problem solved within one day. It needs to be mentioned here that these respondents have better contacts, few have personal contacts with the HMWS&SB officials and hence they managed to get their work done quickly. On the other hand, for 29% respondents it takes about three days and for the rest 24% respondents, it is more than three days. While sighting the issues related to faulty meters, respondents revealed that their complaints are hardly recorded by the officials.

The next section deals with the findings from the slum households having individual water connections.

6.6 Slums with piped water connection

Slum settlements in Adikmet area are concentrated in one part. The settlements consist of people from several walks of life mostly from the poorer background. The most important issue noticed during the survey was in almost every case, several families consisting of many members are dependent on one water supply connection. Access to water in such a stressed condition is severely compromised. Consequently the members are dependent on other sources such as public stand posts or the neighbours or community hand pumps. Since they belong to poorer background neither they can afford tanker water supply nor mineral water and hence resort to several other means to secure access to water. For example they store water as and when it is available to them in whatever storage facilities they have to be able to use later. Moreover, though majority of the respondents said they get clean water however it appeared their response was based on the appearance of water. Because most of the respondents either boil water or use filter before consuming. Therefore one can

conclude that people are not sure of the quality of water they are provided with. A total of 78 respondents in the slums having individual water connections were interviewed during the survey and the results are shown below.

6.6.1 User composition and Socio-economic profile

In the slum settlements majority of the respondents i.e. 59% of the total 78 respondents are either self-employed or engaged in petty business (see Table 6.3). The self-employed are those who are engaged in occupations like barber, road side vendors etc. and a considerable percentage, 23% of the respondents are engaged in private job such as house maid, security guard etc. It was also found that 8% of the respondents in the slum settlements constitute daily labourers. Therefore, majority of the people in the slum areas constitute the people in the Low Income Group (LIG).

Table 6.3: Sources of income

Sl. No	Sources of income	% of Respondents
1	Private Job	23
2	Govt. Job	5
3	Self Employed/Petty business	59
4	Retired	5
5	Daily Labourers	8

On the other hand, a considerable 44% of the respondents in the slums are renters. This shows the vulnerability of the people residing in the slum settlements in terms of access to water because there are several members dependant on the same water source. If an average family constitutes four members, then in premises with five sub-units or family constitute 20 members. Thus, the demand for water in such a situation is enormous and the access is limited. About 37% of the respondents share the same premise with three or more families and the rest share with one more family.

The next section deals with the findings of water supply in the slum areas with individual water supply connection.

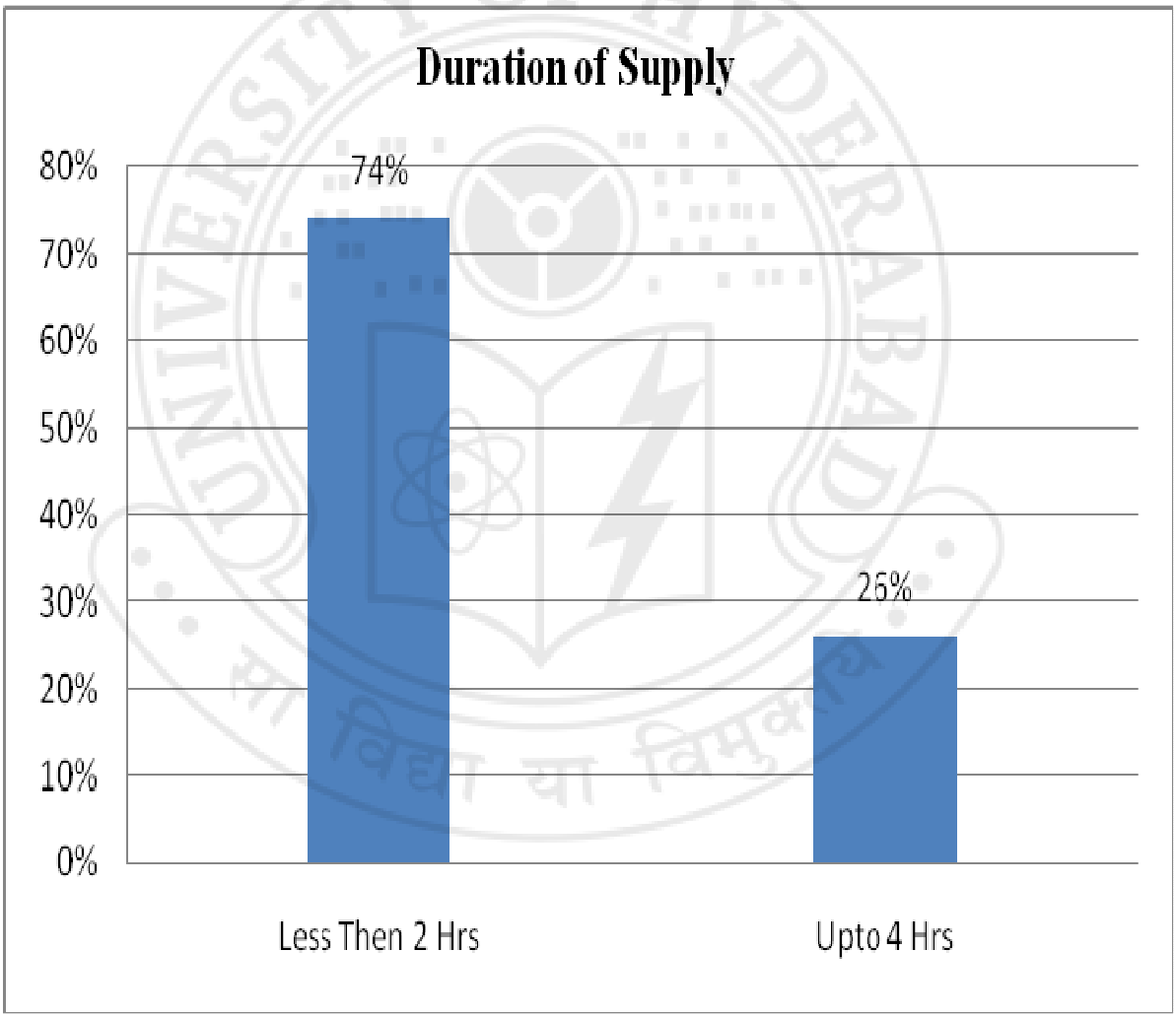
6.6.2 Water supply

During the survey, 97% of the respondents in the slums are stated to have one water supply connection. This assumes greater significance on the face of more

number of families' dependant on the same water connection. As is discussed in the previous section, every family in the slum share the same premises and the water connection with atleast one more family. In such situation, the water availability to the people is limited and they resort to several other means as their source of water gets shrinked.

Moreover in the slum areas, the duration of water supply is limited to a maximum of two hours every alternate day for majority of respondents (74%) (See Figure 6.5).

Figure 6.5: Duration of water supply (Hrs/alternate day)

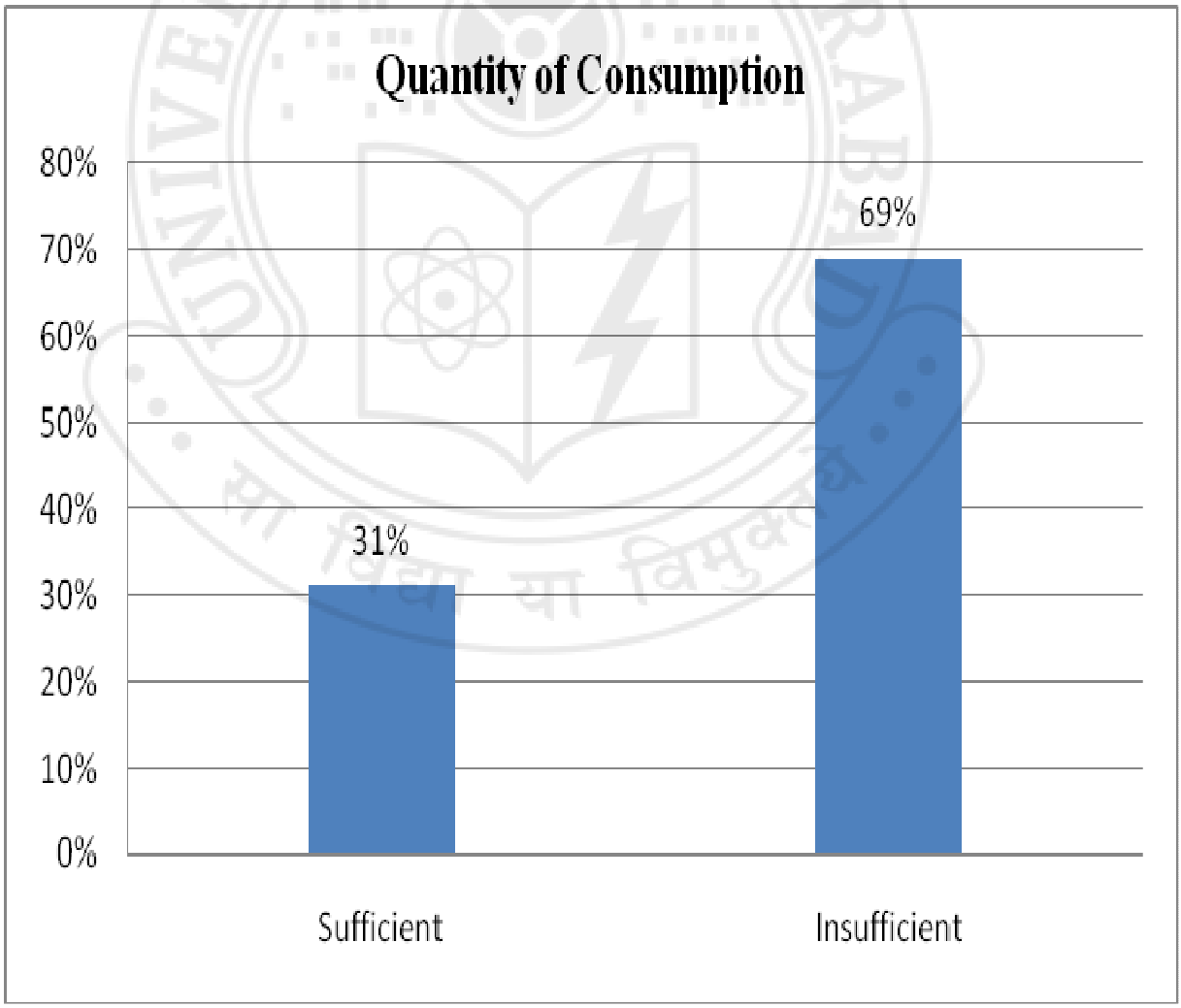


In several instances, the respondents get water for 30 to 45 minutes every alternate day. The supply timings are noticed to be during odd hours for majority of

the respondents such as between early mornings 4 am to 8 am. Majority of the respondents reported that they get water very early in the morning. At times they find it difficult to get up in the morning for water. In addition there is no information to the residents regarding changes in water supply timings. The respondents revealed that they do not get any water related information from the HMWS&SB officials. As a result, sometimes the residents are left without water.

In one of the most important finding, 69% of the respondents reported that the quantity of water they get is insufficient for daily consumption, while only 31% said they get sufficient quantity of water (see Figure 6.6). The respondents felt that the problem is complex owing to combined result of more number of users in a single connection (97% respondents have one connection) and the limited time of supply (less than two hours every alternate day).

Figure 6.6: Quantity of consumption

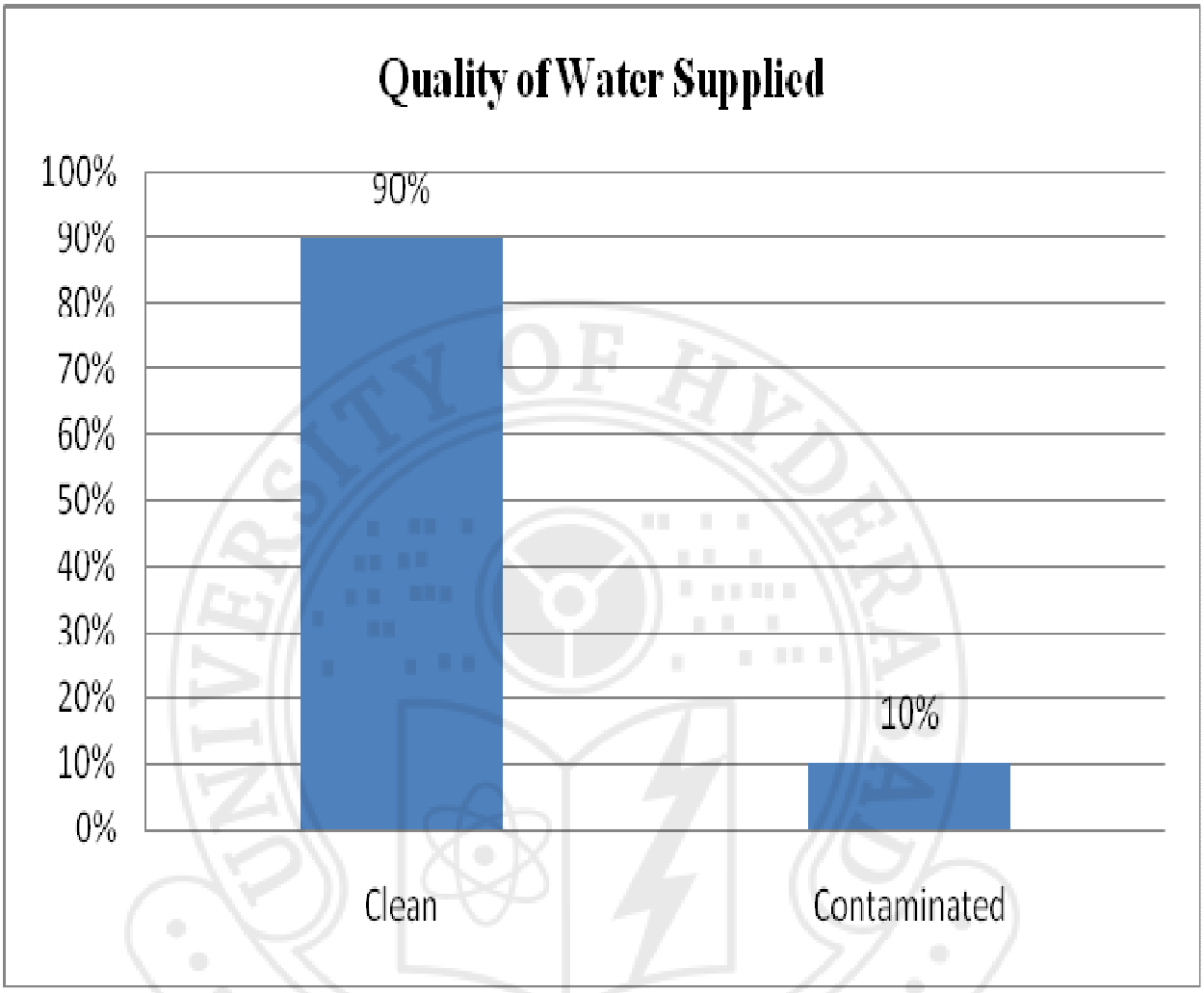


Since for majority of the respondents' water supplied by HMWS&SB is insufficient, they resort to several other sources in order to meet basic water requirements for their daily consumption. While most of the residents depend on the public stand posts or hand pumps on a regular basis, 10% of the respondents also depend on the bore well water, supplied by the neighbourhood house. In this case they separately pay to the private supplier depending on the consumption. However none in the slums reported to be buying tanker water either from the HMWS&SB or private sources.

In addition, the respondents also resort to different mechanisms such as overhead tank, base tank and big containers in order to secure their access to water. Overwhelming majority (97%) of respondents were found to be using big containers to store water for meeting daily water needs. Especially women members expressed that they store water to cope with water shortages. Such arrangements are much more taxing to the residents in the slum areas.

Apart from the quantity of water supplied, the other most important component of water supply is the quality of water supplied. In the slums where there is individual water supply connection, majority of respondents (90%) felt they are supplied with clean water for consumption.

Figure 6.7: Quality of water supplied



However it was found that a combined total of 59% respondents either use filter or boil water before consuming. This shows respondents are not sure about the quality of water supplied by the HMWS&SB. It appeared their assertion that quality of water is clean is based on the colour appearance of water.

6.6.3 Water charges

The basis for water charges in slums is meter rate according to majority of respondents (97 percent felt that they pay their water charges as per meter while 3 percent said they are charged flat rate as they do not have a meter). Many respondents

complained about defective functioning of meters forcing them to pay more. On being asked whether they complained on faulty meters, good numbers said they brought this to the notice of the officials, and no action has been taken. As a result they are paying water bill according to meter rate which is largely faulty and dissatisfied with the defective meters.

While majority of the respondents (74%) said their water meter is checked regularly, others revealed that HMWS&SB officials never visit their households to address the water related grievances. Most importantly, when asked about the water tariff, majority of the respondents (93%) revealed that they pay around Rs 100 per month as their water bill and 7 per cent respondents revealed that they pay in between Rs 100 to Rs 200 per month as their meter bill. Some respondents felt that they are charged more because of the faulty water meters.

6.6.4 Grievances of water users

The focussed group discussion with the users in slums with individual water connections picked up randomly revealed different perspectives on this issue. Of those present nearly 67% respondents reported that insufficient quantity of water is a major problem (see Table 6.4). They expressed that they do not get water according to their requirements and have to resort to several other sources such as public stand posts, hand pumps and neighbourhood. Ten percent of the respondents doubt the quality of water they are supplied. It is important to note here that 59% of the total respondents in slums either use filter or boil water before consuming. This shows the vulnerability of the people and their lack of confidence of the quality of water supplied. Other problems faced by respondents relate to water supply pressure, faulty meter, erratic timings of supply and higher tariffs, etc.

Table 6.4: General problems in water supply (are summed up for clarity)

Sl. No	Problems in water supply	% of Respondents
1	Insufficient quantity	53
2	Contaminated	10
3	Low pressure	12
4	Faulty meter	11
5	High user charges	6
6	Too early to get up	8

In order to solve their water supply related problems, majority of the respondents (54%) approach the HMWS&SB. The rest 46 per cent respondents revealed that they either do the work themselves when it is very necessary or they continue with the existing problem. They do not go to HMWS&SB as they did not get any response in the past for their complaint and they cannot go to private party as they cannot pay them.

Those who approach the HMWS&SB, majority of the respondents get their problem solved either slow (between one day and three days) or late (after three days). Seven percent respondents said there is no response by the officials when they complained. Only 21 per cent respondents revealed that their complaints are resolved by the HMWS&SB officials within one day. These respondents said they have some known person in the HMWS&SB and they have good contacts with them.

The next section deals with the findings from the slum dwellings without individual house service connection.

6.7 Description of the Slum without house service water connection

The slum Ramakrishna Huts in Bathkammakunta, Adikmet section of MCH mostly comprised of huts with thatched roofs. The families in the slum reside in make shift arrangements and none have permanent structure except for the community hall, a temple, a church and the gathering place near the temple. The huts consist of around 400 dwellings (600 families) comprising of about 3000 people. People are residing in the slum for the past 20-25 years. Huts were termed as unauthorised and it was burned and demolished in January 2004 to remove the unauthorised *basti* residents under government lands.[4] However, protests from the civil society groups, media and political parties especially Communist Party of India- Marxist (CPI-M) drew the attention of government and all forcible eviction was stopped.[5] As far as children in the huts are concerned, they earlier were not going to school as there was no school nearby. But due to persistent fight of the local people with the local leaders, the area has got a government and one private school and since last two years children are

going to school. Presently more than 200 children attend school due to the campaign by the CPI-M party.

The basti residents are not recognised as legal residents since they do not have land *pattas* as a result they were not able to avail any government facilities such as Below Poverty Line (BPL) card and piped water supply neither they had voter IDs issued by the Election Commission of India which serves as the identification document for availing various government facilities.

People in the huts continued struggle for several months along with the CPI-M party and another left outfit Democratic Youth Federation of India (DYFI) for issuing of BPL cards. They also organised a *padayatra* (protest walk) under the *Prajapadam* (people's foot) programme. After continued struggle, memorandum and protests (See Annexure - 2) for several months, they were issued white ration cards[6] in 2006. However, before the last general election to the parliament and state legislative assembly in Andhra Pradesh in May 2009, maximum numbers of ration cards were issued. During the same time land *pattas* were also issued to the people in the area.[7] It was again during this election that the residents in the huts got election voter ID card.

6.7.1 Sources of water

Initially when there was no water supply by HMWS&SB, the basti people were dependant on the bore well which is situated one and half kilometre away. There were incidences of conflicts relating to the collection of water from this source. In addition the basti people used to get their water for daily consumption from neighbour households against payment. Next was water from the Public Stand Post (PSP) near the Mallanna Temple and the hand pump near the same temple premise. The first source of water was too distant while from neighbourhood it is against a payment, for the second source the temple authorities' complained of flooding the area and wastage and the hand pump source is unfit for human consumption as it is too salty. There was conflict among the people in collection of water from different sources.

6.7.2 Socio-economic profile of the respondents

The respondents in the slum mostly belong to the lower caste such as SC, ST, BC and religious minorities. The dominant cast group in the slum are tribals such as

Chenchus and Lambadas. The residents are migrants from Telangana region of Andhra Pradesh state. The majority are from the Mahboobnagar district (50%) and the rest belong to the district of Warangal, Nalgonda, Karimnagar and Medak. During interview with the respondents it was found that, the slum dwellers (7-8 years earlier) used to come as seasonal migrant when there is no work in the rural areas. However, due to the loss of livelihood in the rural areas in the above mentioned districts, now the residents have migrated permanently.

The slum dwellers are mostly illiterate. Occupation-wise they comprised of rag pickers, self-employed such as selling of small household items etc. Some of them are also provided with MCH provided rickshaws, who collect solid waste from nearby colonies. Their main source of income is the collection of money (in the range of Rs 20-Rs 40 per month) from each household they cover for collection of solid waste. On an average, both husband and wife in a dwelling covers about 150-200 houses in the nearby colonies and generate their monthly income from the collection of money from these houses. As an additional source of income, few people also collect scrap and sell.

6.7.3 Water provisioning in the huts

Previously people in the huts used to pay approximately Rs 45 per month to the neighbouring households having water connection for their daily water needs (per pot of 15-20 litres costs them 50 paisa to one rupee). The same practice is continuing in the huts still today for the people who could not collect water during the morning hour. In addition to that, sometimes they used to get tanker water supply but there were high incidences of violence for distribution and access. It was also insufficient for the locals. Since the tanker water supply was not regular, the residents used to pay the tanker driver some amount of money (every huts used to pay Rs 10 monthly) so that he brings the tanker regularly.

On the other hand, they were not given piped water connection because they do not have land pattas and are termed as illegal occupants. People in the huts approached the local MLA, MP and other prominent leaders for their water problem. They made representations to the government and the HMWS&SB officials. No one responded because they did not have voting right and were termed as illegal

occupants of the land. The locals protested for over six months in front of the HMWS&SB local office. Especially women members of the huts went in processions carrying empty water pots on their head to the local office of HMWS&SB. This process continued for several months and the residents came together when there was a protest organised for water provisioning while still they are busy in their own work.

After several representations and protests, they got three sintex tanks in 2002-03 for supply of water to the huts. Initially the tanks were filled using tanker water supply which the residents in turn distributed among themselves. However, the tanks were later given water connection by the HMWS&SB without any direct charge from the people. Water is supplied for nearly two hours in the morning (6 am to 8 am) to these tanks from where people collect water for their daily needs. In addition during festivals water is supplied for additional half hour. Water supply is once in two days. (However since the last general election to the state legislative assembly and the parliament in May 2009, it is daily supply).

Since water supply is only during morning, those who could not collect water were dependent on the Public Stand Post (PSP) near the Mallanna temple which is half a kilometre away. Moreover, since it is alternate day supply mostly people are dependent on the PSP and the hand pump near the temple. But the temple authorities' complained to the HMWS&SB, that there is water wastage and the temple premise is becoming dirty. So the HMWS&SB authorities cut water supply during summer 2008. When the people in huts protested the HMWS&SB officials said, "Forget about PSP, you go to anybody, MLA, MP, Minister, we are not going to give PSP connection."[8] The officials said there is no provision for free supply of water. The official reason for such action by the HMWS&SB was given as "pay and use, no free water (through PSP)".[9] On the other hand, when the hut residents brought this to the local MLA, he said pay less amount then others and use water. How long should you use free water is the reply from the MLA as well as the HMWS&SB officials. Further they said "You must start inculcating the habit of payment."[10] The residents in the surroundings of the huts also complaint that they are not getting water properly and how come the residents in huts will get water free of charge. So there was a negative impact on the huts residents. Thus they were not supported by the political parties or officials.

The irony is that, people in the huts are not allowed to use the hand pump water for other domestic purpose also by the temple authorities' stating that they are *dirty people, rag pickers* even though the hand pump water is unfit for consumption as it is highly salty.[11] On the other hand the *basti* people were asked to take individual connection as the HMWS&SB wanted to remove the sintex tanks. But the basti people requested the HMWS&SB and contributed their own labour to construct the elevated platform to place the tanks. There was a round table meeting at the Sundarrya Vignana Kendram, Hyderabad after the Bholakpur incident where representatives of all political parties attended. In the meeting the CPI-M local Convener also raised the issue of water supply in the huts. A Bharatiya Janata Party (BJP) worker also sometime helped the basti resident before he was killed. DYFI, Women's self help groups also worked for the basti resident.

When asked about the quantity of water, an overwhelming majority of respondents said it does not meet even the basic minimum need of the people. It is again validated by the fact that due to scarcity the residents in huts used to take bath once in 10-15 days and water usage was limited to minimum needs. Therefore, the water they get is highly insufficient for daily consumption neither does it meet the CPHEEO norms nor it meets the local leaders calculation of 100 litres as minimum daily consumption per person per day. While interviewing the local leader, he insisted that at least 100 litres of water should be supplied to each person per day. Consequently, respondents reported that they store water in whatever containers they have for usage later.

HMWS&SB official visits the area with lot of persuasion, after several protests and publishing the problem through news paper or if there is any higher official or minister or MLA / MP visits the huts. The former MLA and the former MP were also against the basti resident and didn't give much importance to their plea. If there is complained also neither officials nor the sitting local MLA visit the huts as reported from the respondent's interview. The respondents reported, except the CPI-M party and their local secretary, no other political leaders or group visits the huts and fights for their cause. The local leaders of the CPI-M regularly meets the HMWS&SB officials, give memorandums, publishes the matter in local news paper and organise protest meets when there is crisis in water supply. There is also emerging trends of

public participation in times of crisis which has brought the basti residents whatever water supply they have.

There used to be many police cases of conflicts among the basti residents several of them concerned with distribution of drinking water. However such cases have come down after supply of water to the basti people through sintex tanks and now the basti residents come to the local leader for conflict resolution. Now they have started taking sanitary measures as they are getting water regularly.

Surprisingly, in recent times there are several political groups coming to the area irrespective of political affiliations. The sudden change is attributed to the legal status to the basti residents and the issuance of voter Ids during the last general election in May 2009. The area has now nearly 1500 votes. Officials of HMWS&SB also respond to the complaints given by the area. Consequently, there is a new trend seen in the Ramakrishna huts for provisioning of drinking water.

6.8 Focussed group discussions (FGDs)

As it is mentioned earlier three FGDs are conducted in the study area. The three FGDs correspond to the three categories of sample. The purpose is to supplement the findings from the interview schedule. During the first two FGDs with users having individual water connection, it is seen that an overwhelming majority of people are facing problems such as timings, duration, billing, etc. On the other hand, the third FGDs are conducted with the users having no individual water connection. Their major complaint is that water is insufficient and sometimes they have to manage with hand pump water the quality of which is unfit for consumption. Alternatively they buy water from the neighbours who have water connection.

6.9 Inferences

Considerable percentage of respondents in the households with piped water connection are facing problems like erratic supply timings, insufficient quantity, low pressure, faulty meters, leakage and above all the billing problem. However, majority of the respondents said they did not face any water born diseases because of the preventive measures they take before consuming water (either they boil water or filter before consuming). The next section deals with specific issues that are identified.

6.9.1 Inequitable access to water

It is clear from the above analysis of data that access to water is inequitable distributed among different sections of the society. For example, in Adikmet while 74% respondents in independent houses are satisfied with the quantity of water they are supplied; only 31% of respondents are satisfied in slums with individual connections. On the other hand, none of the respondents in the Comrade Ramakrishna huts are satisfied with the quantity of water they get. Segmentation of the society in terms of economic capability has taken place vis-a-vis the state policy and access to water is decided according to a person's ability to pay.

Further, houses situated in the remote areas are hardly checked for water supply by the HMWS&SB authorities. This resulted in inequality in uses of the water which brought discontent among the water users of the locality. Majority of the respondents expressed that due to inefficiency from the official side there is presence of inequality in uses of water.

6.9.2 High tariffs

There is a major complaint among the people that they are charged higher than the water actually they use. Many respondents also said that the water meters are hyper sensitive and it is operational even with air pressure. It is faulty water meters which lead to unregulated tariff. On the other hand, such complaints are unheeded by the HMWS&SB officials. Some respondents expressed that it is quite hopeless as the officials suggest for replacement of old meter with a new one which works hardly for 2 to 3 months. Therefore it is observed that there is a gap in official record and actual functioning of those meters.

6.9.3 Indifference attitude of officials

Addressing grievances is a biggest problem for the locality as expressed by the respondents. As the male member of the family go out for work it is quite difficult for the female member to visit HMWS&SB office to give a complaint. Almost all the male respondents revealed that to give complain regarding any water supply related problem, they have to take a day leave from the job. Though the telephonic provision is made for users' benefit through Metro Customer Care (MCC), but it does not work

as people highlighted. Therefore, people have to visit the office in person to resolve their water supply related problem. And a number of respondents also simultaneously expressed that their grievances are often ignored by the HMWS&SB officials and people who have close contacts with the HMWS&SB officials get better and quicker responses. It was also found that some respondents have paid extra amount (somewhere between Rs50 to Rs.200) to get their works done. It was found that such practices are regular in order to get their works done.

6.9.4 Insecurity of supply

Most of the respondents are making use of different kinds of additional arrangements to cope with water insecurity. Because they are not informed in advance regarding any disruption in water supply, they feel that they need to be prepared for any unforeseen circumstances such as water shortages, or irregular supply. The additional arrangement varies from users to users as it depends upon their socio-economic background and the capacity to spend on it. Majority of the respondents in independent houses have their overhead tank, base tank, private motor etc to fetch and store water. In addition for the respondents in independent houses the major source of additional water is the private water tankers which provide them water at any time. Whereas the slum households having individual connection revealed that they mostly boil water and store it for drinking purposes.

6.9.5 Taxing the poor

The major sufferers of the present system of water supply are the people in the slums. In the slum Ramakrishna huts users do not have individual water supply connection. Presently, the residents are dependent on the water supplied through sintex tanks and neighbours or the hand pump for their daily water needs. When asked, the HMWS&SB officials said they are in the process of giving water connection to such families. Since their economic capacity is limited they cannot afford to go for additional sources of supply such as bore well and tankers water supply. As a result they have to manage with whatever they get through the HMWS&SB supply. Consequently for majority of the people in slums the quantity of water is inadequate and the quality of water supplied questionable. They have to spend extra amount for the purchase of water filter or boil water before consumption.

In this situation the present supply system is more taxing the poor and at times if they are not able to spend on it, they have to risk their health by consuming contaminated water.

6.9.6 Right to vote and access to water

People having right to vote attracts the political class to fight for their basic needs. The political parties or HMWS&SB officials never used to visit the huts and listen to their water woes but with the Election Commission granting them voter Ids, now all political parties are eager to fight for their cause. As the ruling class has shown interest, the officials also visit the area. This implies that access to democratic institutions (right to vote) makes access to water easier. On the other hand, the CPI-M though it is for increasing their support base has made access to basic services such as water their agenda which has helped the basti residents. Slowly the trend is seen among other political parties.

6.9.7 Emerging trend in community participation

Though there was no formal water supply to the Ramakrishna huts earlier, it is purely the efforts of local people that has paid and now they get at least some access to water. According to Anirudh Krishna, this can be interpreted as active social capital.[12] It is their informal associations through protests and memorandums rather than any organised activity that has brought some access. They form the mutual support networks and come together when need arises and disperse as soon as their issue is attended.

6.9.8 The cost recovery approach

One of the major observations during the survey was the HMWS&SB's keenness in revenue collection, water tariffs and the monthly water bills. While having one-to-one discussion with the General Manager and the Manager and other officials of Adikmet Section-I, it was visibly clear that the orientation from service provider has shifted to financial management and financial stability of the HMWS&SB. The slogan for water supply by HMWS&SB is "I will supply water but pay for it". Therefore the approach has changed to cost recovery.

However, while having a personal discussion with the Manager, he feels that water supply is not business neither a commercial department. People should be charged for conserving and for accountability and not to make profit out of it. Because it is the life of people, it cannot be privatised and government must be accountable for water supply to the people. Further he feels that, rich people can buy water but poor people ask for government service, that is why they elect governments. It was curious to note that according to the Manager, engineer is not required for this (water supply) job. It is primarily to manage people and their water supply related grievances. That is why manager is to manage the people (earlier the designation was joint engineer).[13]

An analysis on different aspects of water supply in Adikmet area, it is seen that while people with sound financial background and good contacts and influence have their access to water secured both through the State and market mechanisms. It is important to note that network building with the officials of HMWS&SB is one best way to get easy access to water. On the other hand, people belonging to the lower income group and those in the slums are primarily dependent on the State supply of water as they cannot afford the market supply and hence their access to water is limited. The most important aspect of water supply in Adikmet is households having individual house service connection at least have access to basic minimum water needs. However, those households who are outside the formal water supply network of the State agencies, access to basic minimum need is not secured. Further an emerging trend is seen that the political parties are making access to basic services such as water as their agenda to fight elections.

In the end, access to water for the people is inequitably distributed in the area depending on their economic capacity and personal contacts. As usual while some people get more and their water access is assured either by the State supply or by market mechanisms, others have to manage with whatever they get through the State supply system. The next chapter is the summary and conclusion of the present thesis.

[1] Interview with Manager, Adikmet, Sub-Division – III, O&M Division no-V, HMWS&SB, July 23, 2009.

[2] Ibid.

[3] During the submission of thesis, however it was noted that the government has declared that the area and several other areas in Hyderabad is supplied water daily. However, there are contestations by the main opposition *Telugu Desam Party* (TDP), that the claim by government of daily water supply is not genuine and people are supplied water on alternate day and in some areas once in two-three days. *The Hindu,* "Srinivas Yadav contests Water Board figures", November 15, 2008.

[4] While interviewing the basti residents they accused the government of foul play along with several influential people in Hyderabad. They felt that it was deliberately done in order to evict them from the land.

[5] Interview with Convener, CPI-M, Adikmet, August 03, 2009.

[6] Government of Andhra Pradesh issues ration cards to the people which are called White cards and refer to the people below poverty line.

[7] Interview with Convener, CPI-M, Adikmet, August 03, 2009.

[8] While having group discussion with the residents in the huts, people spelt out the exact words of the HMWS&SB officials replied to them while they were protesting for the continuation of the public stand post connection.

[9] Interview with Convener, CPI-M, Adikmet, August 03, 2009. While interviewing the Manager, HMWS&SB, Adikmet section the researcher got a similar reply.

[10] These are the exact words people from the huts recall while they met the MLA and officials of the HMWS&SB.

[11] The ground water is also highly contaminated in the area as previously it was a water body where drain water got accumulated earlier.

[12] Anirudh Krishna, *Active social Capital: Tracing the Roots of Development and Democracy,* Columbia University Press, Columbia, 2002, p.5.

[13] Interview with Manager, Adikmet, Sub-Division – III, O&M Division no-V, HMWS&SB, July 23, 2009.

Chapter - 7
Summary and Conclusion

This is a study on "Politics of access to drinking water in urban areas in India: State and market interventions – A case study of Hyderabad." It is divided into seven chapters. Chapter-I is an *Introduction;* Chapter-II is about *Urbanization and Challenges of Water Provisioning;* Chapter-III presents a discussion on *Indian State and Provisioning for Drinking Water;* Chapter-IV critically analyses *Involvement of Private Sector and Civil Society Organizations;* Chapter-V highlights arguments for *Provisioning Drinking Water in Hyderabad;* Chapter-VI presents *Case Study,* while Chapter-VII *Summarises* the study with recommendations.

This chapter is divided into two sections; section one is a summary of the earlier discussions, two lists the findings. What follows is a summary focussed on the politics, the issues and the debates on the provisioning for water to the people in urban areas.

7.1 Summary

A comprehensive discussion preceded the issue of provisioning drinking water in urban areas in India with special reference to the role of State, private sector and civil society organisations. The endeavour of this exercise is to know the politics of inter-relation in provisioning for drinking water to the people and highlight people's access to drinking water vis-a-vis State policies.

The debates include changing perspectives on drinking water policy from the known past to the present; how water provisioning is perceived differently at different times. From being a community managed property or a common property resource (CPR), water policy metamorphosed into a commodity to be *bought* and *sold*! The process got impetus with the globalisation process. At the macro level though a think tank started with a more holistic approach in the 1970s' for water resource development, by the early 1990s' the tone had changed for more market centric approach and commercially viable projects. The neo-liberal policies after the

1980s'called for withdrawal of the state as the primary service provider to the citizens. The withdrawal of the state from public provisioning and its implications has been cautioned by several authors. In an interesting work Vandana Shiva, *Water Wars: Privatisation, Pollution and Profit* (2002) cautioned against the free market and the process of globalisation which eventually leads to the shift of control of resources from local communities to the private sector and the transnational global operators. Going a step forward Amita Baviskar in her important work *Waterscapes: the Cultural Politics of a Natural Resource (ed)* (2007) argues that neo-liberal prescriptions about water management have not only encouraged privatisation, but also "refashioned the State into the image of a corporation." The debate is further continued in an important observation by Amit Bhaduri in his article on the "Predatory Growth" (2008). He argued that the market-based approach is biased in favour of the rich and often involves irreversible damage to the environment. The debate is further enriched by Ramaswamy Iyer in his interesting work *Water: Perspective, Issues and Concerns* (2003). He argues that issues of equity, social justice and sustainability are not necessarily the concerns of the market. Therefore in a market system, whoever has ability to purchase will be the first to be served leaving the majority to compete for little resource. While the neo liberal policies are pursued in the name of efficiency, the results of efficiency do not guarantee distributional equity in basic social services is argued by Amarty Sen in his pioneering work *Development as Freedom* (1999). The argument is further strengthened by Joseph Stieglitz in his work *Globalisation and its Discontents* (2002). He argued that as a consequence of the fast implementation of liberalisation and the globalisation, there is discernible increase in destitution and social conflict. The argument here is that the neo-liberal policies have an adverse impact on the marginalised section.

However, contrary to this there are also authors who supported policies that give the market an upper hand. They argue that the state institutions are unable to handle a vast area of operation such as provisioning of services to the people. There is no efficiency, economy or effectiveness and red tapism is widely prevalent in the functioning of state agencies. Among those who demand attention are the works of Terence R Lee. In an important work, *Water Management in the 21st Century: the Allocation Imperative* (1999) Lee argued that water needs to be both priced and traded

in the interest of water use and efficiency. Ruet, Saravanan and Zerah in their work entitled, "The Water and Sanitation Scenario in Indian Metropolitan Cities: Resources and Management in Delhi, Calcutta, Chennai, Mumbai" (2002) argued that failure of public systems in terms of the duration, regularity and dependability of supply and the quality of the water provided, made water markets flourish in cities. They suggest that the challenges of future water demand can be met through water markets. Work of Pereira, Maravall and Prezeworski, *Economic Reforms in New Democracies: A Social Democratic Approach* (1993), elaborated that state must be market oriented to be successful and market must replace state. Continuing the trade in water argument Saleth and Dinar in their work, "Satisfying Urban Thirst: Water Supply Options and Pricing Policy in Hyderabad City" (1997), opined that water is expected to be transferred from less efficient uses such as irrigation which has less value to more efficient use in urban areas having higher returns. Dinar and Subramanian in an important publication entitled, "Policy Implications from Water Pricing Experiences in Various Countries" (2002), argued that trading in water rights promotes water use efficiency as markets allocate water to the highest paying user. The argument is supplemented by Rogersa, DeSilva and Bhatia in their work, "Water is an Economic Good: How to Use Prices to Promote Equity, Efficiency, and Sustainability" (2002). They argued that price of water reflects its true cost. The best way in their opinion is to utilize water is by putting a price on water, and evolve appropriate tariff structures to meet different social, political and economic goals in different situations.

Calling for a more vibrant private sector participation in the water service delivery sector they called for a smaller role for State and the penetration of market in the provisioning of basic services.

Here it is of interest for any student of public policy to understand; (1) the penetration of market to the social service provisioning to the people, (2) what is the degree of market penetration, and (3) why market penetrated into the social sector?

It is in this context that the researcher has taken up the study in water sector. However, the implication of the study is not only confined to water sector but also to other social sectors such as transport, energy etc. It will be of interest to anyone that the globalization process has called for 'return on investments'. Investment here is the allocation to a particular social sector by the State. In other words, it is the cost

recovery approach to service delivery, which further gets strengthened with the World Bank and IMF's conditionalities for loans. Further, citizens who were referred to as 'users' or 'beneficiaries' earlier are now called as 'customers' or 'consumers'.

Slowly the political control over decision making got diluted and sometimes dictated by non-state actors. The elected representatives are less responsive towards people's problems and are more tuned to the voices of aid agencies. This led to the segmentation and identification of people according to their economic capability. Consequently the distribution of water has taken an inequitable character resulting in social conflicts among the users. The dynamics of conflicts revolved around the need for survival and marketisation of the same.

On the other hand, there is demand for declaring water as a right. While the debate continues, the issue remains inconclusive owing to noncommittal stand of nation states which are more comfortable with the identification of water as a basic human need. The fact that drinking water found a place in the Millennium Development Goals (MDGs) making it as a sort of policy obligation consequent to declaring it as a right has a political dimension to it.

Apparently the inclusion of the access to drinking water as a right suggests a new concern on the part of 'nation states' legitimised by UN's MDGs. However a closer look at its inclusion and subsequent expectation of the UN and other agencies that nation state has to evolve a new policy regime for realisation of the right according to critical observers' smacks of politics. If one goes by the budgetary and other constraints it will be clear that the rights based approach towards water has to take into account new policy regimes which spell privatisation of water sources, public private partnerships and a host of other policy instruments which may eventually lead to comodification of water. On the other hand, the civil society organisations as the undeclared champion of the marginalised class are vying for some accommodation and constantly keep a vigil on the process.

The process gets its legitimacy on the face of inability of state provisioning for drinking water to urban people. The rapid pace of urbanisation has fuelled the demand for drinking water needs. The policy response is by identifying new sources with big budgetary schemes such as Krishna River and Godavari River. Since the State lacks

the financial ability to execute such schemes, it is often taken up with the assurances of financial assistance from the World Bank.

On the other hand, this reflects the weak planning capacity of the State. Yet the people are made to believe that government cannot do beyond this. Since consumption of water is directly linked to health a situation is created in which people are compelled to opt for buying purified water. This automatically created a demand for such provisioning which is in the private sector. The argument of efficiency, economy and effectiveness is brought here to justify the claim. It is argued water needs to be priced and traded to bring efficiency and economy in water uses.

It is a well known fact that people prefer to have an independent water connection mainly for better access to water. State policy is expected to facilitate universal access to water. However, it is seen that at the micro level there are several administrative and other bottlenecks to get connected to the organised water supply system. For example, the primary requirement for water connection is the legal land tenure in the absence of which a person is not entitled to have a valid individual water supply connection. In this process, a large section of people in urban areas had to remain outside the purview of the organised water supply. Further people are expected to pay a hefty amount of money towards water connection fee! While for the rich it may be common but for poor, it is beyond their reach! Therefore, the poor get excluded. Further water supply is based on the people's ability to pay for it. In this way, State policy has created segmentation of the society in terms of economic capability. Hence people having higher economic capability, has easier access both through state and market mechanism. This is the case perhaps with other essential services too.

The political culture that has entrenched into the society and people is how to get things done even without processes. To get early access to water, what seems to work more efficiently is personal contacts and money power. William Reno (1995) in an interesting work on Shadow State comprehensively analyses this phenomena. According to him, it is the product of personal rule constructed behind the disguise of *de jure* state sovereignty. Here the state functions outside formal institutions. The rulers have vital interest in making the lives of their population less secure and more

materially impoverished, since this encourages individuals to seek the ruler's personal favour to secure exemption from these conditions. Therefore governance bears the characteristics of traditional authority where the obedience of a population is owed not to enacted rules but to the person who occupies a position by authority. Such growth outside the arena of state institutions has a negative impact for healthy growth of democracy.

It is often held that state is unable to meet the ever increasing demand for water. The inability of the State agencies to meet the ever increasing demand for water has left the people at the mercy of private sector. They are primarily the informal water suppliers through tankers or the more organised water markets. There is no worthwhile regulating or monitoring authority on the water quality that is being marketed by such agencies.

The major sufferers of the emerging situation are the middle class and the low income groups staying in improvised conditions. When there is unrest over supply of drinking water the elected leaders grant some arrangement for water supply such as providing a tanker or a Public Stand Posts (PSPs). However, there is no political commitment to back the provisioning and make permanent arrangement. Therefore the problem recurs again and again. This creates conducive atmosphere for nurturing leadership and constituency due to scarcity. For example in Adikmet, the study area the number of public stand posts in the last two years has come down to 37 from 57 forcing the people to buy water even though there is increase in population.

While the State provisioning deprives assured and easy access to the marginalised, the market mechanism has further led to massive deprivation. The process has become more insidious with the market making inroads directly into the houses of people through expensive mechanisms such as bore wells and other equipments to draw water in an unsustainable manner in the absence of a secured State water supply. This has put question mark to the sustainability of the resource itself.

Therefore it is clear that access to water in urban areas is in an anarchic situation. The details of water supply are not appropriate but are based on approximation which can be contested. On the other hand, the mismanaged migration of people to urban areas has challenged the State's ability to provide water to all.

There is no mechanism to control and manage the migrant people neither there is any mechanism to keep a record. The emerging situation is chaotic. Therefore, we don't know when the crisis blows off.

Let's examine it from another dimension. It is seen people who have voting right have no problem in accessing State provisioned civic services. Especially in the issue of water it works in two ways. One, since some people are termed as illegal occupants they are not given a voter Id card neither any state official is concerned for their need nor there is anyone on their behalf to demand. On the other hand, since they do not have voting right, the elected representatives and the political parties see it worthless effort to provide them with civic services such as water! It may be mentioned here that, today it is voter ID cards tomorrow it may be water ID cards issued by water supply bodies such as the Hyderabad Metropolitan Water Supply and Sewerage Board (HMWS&SB). Those not having water ID cards will not be supplied water. There is already a move to issue Unique Identification cards (UID) by the Government of India in addition to the already issued ones like voter Ids, ration card, PAN card etc. The question is how many ID cards a person is expected to have. Moreover, the State authorities are liberated of any responsibility towards these people terming them as illegal occupiers not counting as valid citizens for planning. There is no mechanism to monitor the migrants from places around urban areas. So, the plans do not include them. Therefore access to democratic institutions and people's Right to vote can be directly linked to right to water. The same has been proved in the case of Comrade Ramakrishna Huts in Adikmet where neither politicians nor officials of the HMWS&SB visited before issuance of voter Ids. As they are voters now, they receive some attention. Needless to mention that those without voting rights stand excluded.

Therefore to examine and to understand the debate in its entirety, the researcher took up a study and selected Hyderabad which is the fifth largest metropolis in India. Provisioning basic services to the people in a city like Hyderabad is not an easy task. The Government of Andhra Pradesh opted for reforms as part of an attempt to meet the new challenges in this sector. Provisioning of drinking water to the people in Hyderabad is not immune to the process of globalization.

The impact of reforms, policy response at a macro level and its effects cannot be understood without a primary, field-based, micro level study which involves direct contacts with the users or beneficiaries. Therefore the study is an empirical study and involved extensive field level survey, interviews and discussions for 107 days with the residents of the sample area, i.e. Adikmet in Hyderabad, Andhra Pradesh. Further details of the method and instrument employed for pursuing the objectives are discussed subsequently.

The next section presents chapter wise summary of the thesis.

The introduction chapter discussed at length current debates on the issue of access to drinking water in urban areas in India. India being a heterogeneous society consisting of rich-poor, divisions on the basis of caste, class, provisioning water to all unarguably is a daunting task. A review of main arguments noted that newly independent State started with a welfare approach and reached a situation where it found inherent difficulties in it. While there is pressure on the State from its citizens to deliver services like water, it came under increased pressure from diverse forces to downsize its role in less than 50 years. Consequently, the expectation from private sector increased resulting in a more 'market-centric' approach to service delivery. On the other hand, the demand for a rights' based approach to water planning and policy is strengthened as the deprivation level increased in urban areas. Large number of writers commented on it. Some of them include; Shiva (1991), Sen (1999), Ramchandriah and Prasad (2004), Singh (2006), Baviskar (2007), Banerjee and Somanathan (2007), Dubash (2007), Mosse (2007), and Mehta (2008).

There is an increasing demand for water in urban areas. Neither it can be ignored nor sidelined because the contribution coming from urban areas constitutes 60% of the country's GDP. The increase in the demand for water in urban areas is consequent to an increase in migration to urban areas and a rapid urbanisation is discussed in chapter two. It has thrown new challenges for water provisioning. Authors like Biswas (1976), Rao (1985), Kundu (1983), Rangaswamy (1993), Shivaramakrishnan (1998), Ruet, Saravanan and Zerah (2002), Llorente and Zerah (2003), Rao and Dev (2003), Mohan and Dasgupta (2004), Gujja and Shaik (2005),

Gupta (2005), Iyer (2005), and Kundu and Singh (2005) have discussed on these issues.

In response to a growing demand for water, the state has attempted to adopt adequate policy at appropriate time. A detailed examination of the policy and schemes that the government had adopted over the past decades is taken up in chapter three. However, it is realised that providing water to all has remained an unfinished agenda of the government. Several writers who argued on this include, Singh (1991), Ramanathan (1992), Nandy (1998), Ruet, Saravanan and Zerah (2002), Iyer (2003), Llorente and Zerah (2003), McKenzie and Ray (2004), Banerjee and Somanathan (2007), Panickar (2007), and Ballabh (2008).

The inability of the state mechanism to meet the growing demand for water has led to different judgments. While one section put pressure on the State mechanism to deliver other argue for non-state actors (such as the private and voluntary sector) to deliver services such as water. The second set of argument surpassed owing to the reform in state sector is deliberated in chapter four. A number of authors have debated on this. Some of them include; Bardhan (1984), Maheswari (1986), Leftwich (1994), Pereira, Maravall and Prezeworski (1993), Williamson (1993), Saleth and Dinar (1997), Atack (1999), Abrahamsen (2000), Briscoe and Garn (2002), Gleick (2002), Rogersa, de Silva and Bhatia (2002), Saleth (2002), Shiva (2002), Ghosh (2003), Iyer (2004), Holland (2005) and Iyer (2005).

Chapter five analysed the provisioning of drinking water to the people of Hyderabad. While debating the rapid demographic growth of Hyderabad it identified the consequent challenges it posed for the civic authorities. The inability of the Hyderabad Metropolitan Water Supply and Sewerage Board (HMWS&SB) to meet the ever growing demand for water of the people in Hyderabad has fuelled the private players in the form of packaged water and tanker water supply to proliferate rapidly. On the other hand, several civil society and voluntary organisations in the city have continuously campaigned putting pressure on the HMWS&SB as well as the government for better water delivery to the people.

Chapter six analysed the data collected from the field, Adikmet Sub Zone – 1 of Adikmet Water Supply Zone (O&M Division no – 5 of HMWS&SB). An analysis of different aspects of water supply in Adikmet area is done.

7.2 Objectives

The chapters discussed in brief above are consequent to the objectives set for the study. The following are major objectives of the study.

- To present the changing role of the State in providing drinking water to its citizens in urban areas and also the politics involved.
- To examine the politics of inter-relations between the State and the market.
- To analyse the State policies on water.
- To discuss stages of private provisioning of drinking water.
- To explore the role of civil society organisations vis-a-vis right to water.

On changing role of the state vis-a-vis provisioning for drinking water many writers commented. It may be recalled here that the State since 1980's has been showing a marked departure from public provisioning of drinking water. It needs to be stated that authorities like Vandana Shiva (1991), Kapur & Webber (2000), Sen (1999), Kohli (1991) and others have extensively worked on this trend. The researcher reviewed the works of Saleth and Dinar (1997), Ramchandriah and Prasad (2004), Singh (2006), Baviskar (2007), and Banerjee and Somanathan (2007). Discussion on this can be found in the thesis in Chapter-1 (pp. 1-34), Chapter-2 (pp. 55-61) and Chapter-3, (pp. 81-103). The departure made way for other agencies such as the market or private sector and the civil society to step in. Detailed discussion finds a place in Chapter-4 (pp.114-39) and Chapter-5 (pp. 164-70).

The second objective of the study describes how downsizing of State agencies took place with consequent rise in the market oriented reforms and greater role for the private sector. This led to the commoditisation of water resources. This ignited the debate on the publicness of water. Discussion on this can be found in Chapter-1 (pp. 3-13, 24-5) and Chapter-4 (pp.115-18, 125-30) in the thesis.

The distribution of drinking water to the people as a consequence of state policy is examined. It may be mentioned here that the State segmented people based on their economic ability in order to access water. Apparently it is clear that people who are able to pay demand first priority in water supply. A detail deliberation can be seen in Chapter-2 (pp. 62-71), Chapter-3 (pp. 103-08), Chapter-5 (pp. 158-63) and Chapter-6 (pp. 179-200).

The adoption of reforms post 1980s' for a smaller State role, the role of private sector is emphasised which is echoed in the State's planning for water. Since the Eighth Five Year Plan, the involvement of private sector from planning to delivery of drinking water is emphasised. On the other hand, there are several MNCs and small time private water suppliers catering to the needs of people in urban areas. Therefore, the private sector apart from playing a partnership role is also involved in direct supply of water to the people. A detailed debate is taken up in Chapter-2 (p. 61), Chapter-3 (p. 94), Chapter-4 (pp. 116-27) and Chapter-5 (pp. 164-65, 167-68).

Civil society organisation and its role are re-invented with the emergence of governance reforms. They are regarded as the third sector and are playing an important role for the cause of access to basic services by the marginalised section. They primarily work as pressure group putting pressure on government machinery to effectively deliver services but also sometimes involved in direct service delivery to the people. An analysis of this trend can be found in Chapter-3 (p. 94), Chapter-4 (pp. 130-39) and Chapter-5 (pp. 168-69).

7.3 Method

To test the above objectives the researcher has chosen stratified sampling method. The target groups are divided into three categories, i.e. independent households, slum households with individual water connection and slum dwellings without individual water connection. For selecting the exact sample systematic sampling is applied i.e. every 50^{th} household in case of first two category and every 10^{th} households in case of the third category. The sample is without replacement. Therefore there is non-coverage because of the non-availability of people in some households even after repeated visits. The number of actual sample studied is 246 (the estimated sample is 290), 136 independent households, 78 slums households with water connection and 32 slum dwellings without individual water connection constitute the slum. It constitutes 5% of the total households in case of first two categories and 10% in the third category. Income wise the sample belongs to higher income groups, middle income groups and low income groups. An interview schedule is administered to the respondents. A majority of the respondents are women. Three Focussed Group Discussions with selected residents are carried out to supplement the

field data. Several officials of the Hyderabad Metropolitan Water Supply & Sewerage Board (HMWS&SB) are interviewed which helped in crosschecking the data. Descriptive statistics is applied to analyse the data collected. The area selected for the study is Adikmet and Comrade Ramakrishna Huts, in Hyderabad, Andhra Pradesh. A map of Adikmet is presented in chapter six (p.177).

The next section highlights the major findings from the field.

7.4 Findings

Irregular and erratic water supply, inequitable distribution, lack of adequate allocation to this sector and poor physical infrastructures continue to plague the system. On the other hand, the losses owing to poor distribution and transmission practices are enormous and sometimes as high as half the water actually delivered. The people most affected in such a system are the powerless. It is observed that people of all strata especially lower are migrating to the urban areas for better livelihood options. It has rapidly increased the process of urbanisation and population growth in urban areas compounding the problems of already problem ridden state agencies dealing with water distribution. While the agencies attempted to provide drinking water to all, lack of adequate infrastructure and low financial allocation prevents them from any concrete result.

Further the issue of water is not only concerned with engineers and bureaucrats. For example, in Adikmet the engineer whose designation has since been changed to *manager* is more concerned with managing people. His primary responsibility is not engineering related but management of people. Moreover, by creating a separate specialised agency the HMWS&SB in Hyderabad independent of Municipal Corporation, the State has violated the spirit of constitutional provision. Neither the city level elected representative nor the community is a part in the formal organisational structure of the HMWS&SB. By making the distribution of water a techno-bureaucratic affair has left people without a platform to demand better service. Moreover the techno-bureaucratic officials are not directly accountable to the people and are permanent government servant. This makes the issue of accountability a mockery where responsibility is diluted from the elected representatives.

This brings us to the discussion about the new role of emerging political leaders. It may be mentioned again that access to water is also a cumulative result of how well people are connected to the state authorities. Where there is no formal supply or inadequate supply, it is observed people are coming together for a common cause. Such actions paid well and have brought some sort of provision for them. The community members are individual actors, they are unorganised in terms of formal associations but they come together as need arises. According to Anirudh Krishna (2002) it is called as active social capital. This is a new emerging trend in ensuring people's access to water.

In this context the role of new social leadership is significant. There is a positive trend in terms of people's access to water. The role of street leaders some with political affiliations and some without has worked well. It is what according to Public Choice Theory maximisation of self-interest, where local political leader or groups are working for their votes and support base while the public is utilising the service of the leader for accessing basic resources.

Further, the head of the HMWS&SB is the Chief Minister of the state. The point here is if the Chief Minister who is politically most powerful in a state is heading the water supply organisation, it is virtually a one man affair because whatever the Chief Minister says will be final. Therefore the technical and human details and expertise generally gets lost.

Moreover, in the name of downsizing the government made no recruitment of new personnel even at crucial skilled level for the past few years. This leaves a vacuum in the operational level and implementation of schemes owing to lack of skilled personnel. With dwindling personnel it can be stated that the grievances of users goes unattended. Based on the field study and taking into consideration a number of interviews organised by the researcher and taking into consideration the views of the general public living in the study area using Focussed Group Discussions, the researcher presents the following findings:

7.4.1 Individual water connection

- In the independent households, 68% respondents have one water connection, 30% have two and 2% have three water connections. In the slums with individual water connection 97% of the respondents have one and 3% have two connections. In the third category sample none has an individual water connection.

7.4.2 Duration of water supply

- In the independent households, 70% respondents get water for upto two hours on alternate days and 30% get for 4 hours or more. In the slums with individual water connection 74% respondents get water for less than 2 hours and 26% gets upto 4 hours on alternate days. In the third category sample with no individual water connection water comes for upto 2 hours on alternate days, gets accumulated in the tank from where people collect.

7.4.3 Quantity of supply

- While 74% of the respondents in independent households said they get sufficient water for consumption, only 31% in slums with individual connection agreed on this. However an overwhelming majority of respondents said they didn't even get the minimum.

7.4.4 Quality of water

- In independent households, 66% respondents use filter water, 27 per cent prefer to boil and 7% prefer mineral water. In slums with water connection, 59% respondents either use filter or boil before consumption. Dwellings without connection consume as it is since they cannot afford to buy filter nor have resources to boil.

7.4.5 Pricing and user perception

- In independent households, 26% respondents pay below Rs 100, 49% between Rs 100 to Rs 200 and 20% more than Rs 200 as monthly

water charges. It is also observed that 8% of the respondents pay more than Rs 300 per month. In slums with water connection 93% respondents' pay around Rs 100 and 7% between Rs 100 to Rs 200 per month. Many respondents have complaint regarding excess bill. In the third category, they do not pay anything to the HMWS&SB.

7.4.6 Grievance redressal

- In independent households, 49% respondents get their water related problem solved within one day, 29% three days and 24% more than three days. In the slums with water connections, 21% get their water related problem solved within one day, 72% three days or more and 7% gets no response from the HMWS&SB.

7.4.7 Coping with water insecurity

- Most of the respondents are making use of different kinds of additional arrangements to cope with water insecurity. Since they are not informed in advance regarding any disruption in water supply, they feel that they need to be prepared for any unforeseen circumstances such as water shortages, or irregular supply.

7.4.8 Economic capacity and access

- It is seen that while people with sound financial background and good contacts and influence have their access to water secured both through the State and market mechanisms. On the other hand, those who cannot afford entirely depend on State supply. However to bring effectiveness and economy in water use, HMWS&SB has removed Public Stand Posts (PSPs) on which poor people entirely depend. In the last two years, the HMWS&SB has removed 20 PSPs eventhough there is increase in population forcing people to buy.

7.4.9 Right to vote and access

- Neither politicians nor officials of the HMWS&SB visited Comrade Ramakrishna Huts in Adikmet before issuance of voter Ids. As they are voters now, they receive some attention. Conferring right to vote is a *de facto* guarantee to access water.

In the slum Comrade Ramakrishna huts users do not have individual water supply connection. Presently, the residents are dependent on the water supplied through sintex tanks and neighbours or the hand pump for their daily water needs. Though there was no formal water supply to the Comrade Ramakrishna huts earlier, it is purely the efforts of local people and local leadership they got at least some access to water.

7.5 Towards Commercialisation: Trends and Issues

There is a slow tendency towards commercialisation. The HMWS&SB which is dependent on grants and loans from outside agencies is under the dictate of non-state actors. This has played the catalyst for rapid commercialisation of water sector in Hyderabad. However, in Hyderabad the process got slowed down with the change in regime from the Telugu Desam (TDP) to Congress party. The Congress party has taken a more populist stand as expected. There seemed to be a new political trend emerging with political parties accepting access to basic services such as water an agenda to fight elections.

7.6 Water as a basic right

The concept of water as a right continues to be a powerful slogan as right! But few envy its implementation. The State has a responsibility to ensure that no one is denied this right, even if the service provision is entrusted to a private agency.

Access to water is promised quite sometime ago, came up for implementation at last but there are quite a few issues that needs to be resolved. On a short notice water to be supplied, as it is central to health. Therefore there needs to be better provisioning for water.

7.7 Institutional arrangements

Local bodies must be strengthened to devise plan and not wait for a disaster to happen. Like in rural areas, the concept of Pani Panchayat can be thought of in urban areas too if not in the same format. They can be in urban wards to include the urban poor in decision making for better facilitating their access to water.

Insensitiveness on the part of the bureaucracy is leading to half hearted implementation of schemes. Therefore there must be advisory body at the city level consisting of general people regarding water. They can be consulted in matters of planning for water and better service delivery to the people.

In the light of MDGs, comprehensive overhaul of HMWS&SB is required and must be given a more holistic approach for water supply. Systemic change for HMWS&SB and MCH needs to be carried out, to have joint migration officer to identify the migrants and give them a temporary stay cards so as to keep records of people coming to the city and plan basic services like water.

It is seen that households connected to the formal supply network has some basic access. But for those not connected is highly insecure. Therefore, by giving everyone water connection some basic access to water can be ensured.

Reduction in physical losses must be undertaken. This will not only lead to increased water supply but also result in increased duration of supply. Ground water in future is likely to be the main supplementary source of water. Currently it is utilised in an unplanned and unregulated manner. There is a need to assess the present availability of the groundwater after registration of bore wells and putting a certain cap on the withdrawal of water.

State intervention has yielded positive results, however the efforts are insufficient in conjunction with the rapid demand. The inability of the State to meet the emerging demand for water has created fertile ground for social conflicts which the State is unable to deal with in a democratic manner. The problem has also stemmed from the segmentation of people in terms of economic capability. On the other hand, the efforts of State to privatise the Common Property Resource (CPR) such as water have negative externalities not only in terms of access to drinking water

but also with livelihoods of the people. Therefore, water must not be seen only as a techno-bureaucratic and commercial issue but also as a socio-political question.

The management of water has become a complex policy issue bringing into its fold state, market and civil society. Attempts of commercialisation of water are evident and there appears to be some justification in the criticism. The study started as an attempt to understand the politics of inter-relation between state and market in India for provisioning for water to the people. It shows that water is fast becoming a tradable commodity the consequences of which are seen and felt.

The study started with a purpose to figure out the changing role of State in the present context, the debates on which are presented earlier in the chapter. In the debate it is seen that several authors cautioned that a changed role of State in service delivery will have an adverse impact on the marginalised section. Further efficiency and effectiveness are the watchword for reforms without linking it to equitable distribution of resources. Certainly efficiency and effectiveness (in cost recovery) are visible. However what is missing is access to certain basic minimum services. This study shows strong indications of State agencies eagerness to opt for privatisation route in essential services like water. The outcome of such policy is seen in Adikmet, Hyderabad. More such studies perhaps are needed to conceptualise the phenomena in policy terms.

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Interview Schedule

Politics of Access to Drinking Water in Urban Areas in India: State and Market Interventions - A Case Study of Hyderabad

Name of the Researcher: Samanta Sahu

Date: _____ Respondent No: _____

Section - I

1. General Profile:

1.1 Name:

1.2 House No/ Locality:

1.3 Phone no:

2. Household Profile:

Could you please give details about the family size and occupation of the family members?

2.1 Family Size

Adults	
Children (below 14 years)	

2.2 Occupation & Income Profile

Sl No	Member	Occupation
1		
2		
3		
4		

2.3 Household Income profile

Avg. Monthly Income (Rs)	

2.4 Typology of Housing (Tick *the appropriate*)

Apartment	Independent House	Slums

2.5 Occupancy Status (Tick *the appropriate)*

Own	Rented	Others

2.6 Please mention the number of sub units in your residence/apartment. _____

Section - II

3. Water Supply:

3.1 Do you have a public water connection?

Yes	No

(a) If yes, no of connections you have and the amount you paid to get the connection _____

(If no, go to section - III)

3.2 Details of Supply

1.	Duration of Supply (Hrs/Day)	
2.	Supply timings	
3.	Quantity of consumption*	
4.	Quality of Supply*	

Quantity: Sufficient- 1, Insufficient- 2
Quality: Clean- 1, Contaminated- 2.

3.3 Can you mention in the table below other mechanisms adopted by you and costs incurred on them for water security:

Particulars	**Usages**	**Monthly expenses**	**Investment made**
a) Overhead Tank			
b) Base Tank			
c) Motor			
d) Bore well			
e) Tankers			
f) Filter			
g) Water boiling			
h) Mineral water			
i) Storage/container			

4. Water Charges:

4.1 Is your water connection:

- ❑ Metered
- ❑ Not- Metered

4.2 Is your water bill based on?

- ❑ Flat Rate
- ❑ Metered Rate
- ❑ No billing

4.3 Is the meter accuracy checked by the Water Board?

- ❑ Yes
- ❑ No

If yes, how frequently is it checked? _____

4.4 What is your monthly water bill? _____

5. User Grievances:

5.1 Whom do you approach in case of a problem with water supply?

a. HMWS&SB
b. Private
c. Other
d. Nobody
e. No problem

5.2 What is your mode of complaint?

a. In person
b. Telephone
c. Other

5.3 In case of HMWS&SB, how many days it takes to rectify your problem?

a. One day
b. Two days
c. Three days
d. More than three days
e. Don't come

5.4 What kind of problem do you face in water supply?

_____
_____
_____

Section – III

6. Dwellings Without Individual Tap Connections

6.1 Where do you get water?

6.2 Is it merely minimum needs?

6.3 Does it meet your water requirements? (Sufficient/Insufficient)

6.4 Does it meet the water supply norms by CPHEEO?

6.5 How do you store water?

6.6 Who decides the adequacy of water – the water board or the basti leader?

6.7 Who protects your water needs?

6.8 Why do they protect?

7. Local Leader's Role in Ensuring Minimum Civic Requirement like Water

7.1 What is their role?

7.2 What are their political obligations?

7.3 What kind of pressures they apply for getting water?

Researcher's remarks:

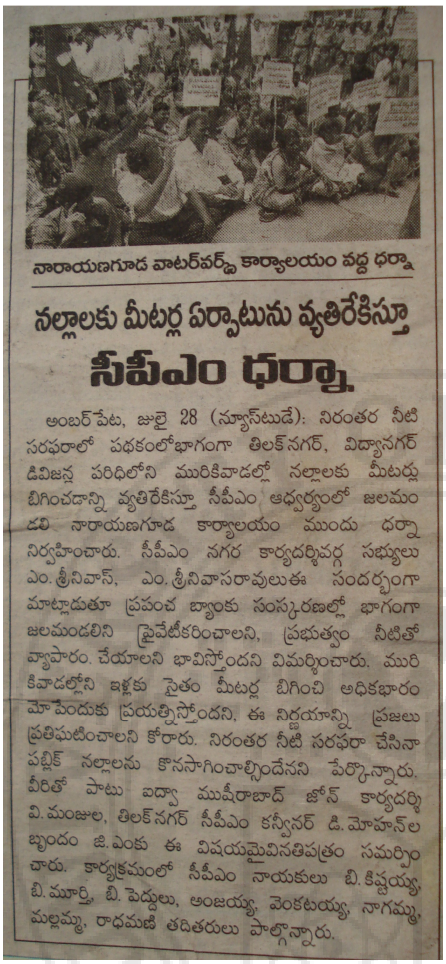
Copy of Newspaper Clippings Detailing Problems Relating to Drinking Water in the Study Area

Different issues and problems such as dug well as drinking water sources

People's woes on water supply as reported in Telugu newspaper

Padayatra in Hyderabad by CPI-M in order to draw attention of the government for solving the water problems of study area

Relay hunger strike demanding pucca houses by the huts residents which will fetch them a permanent water connection!



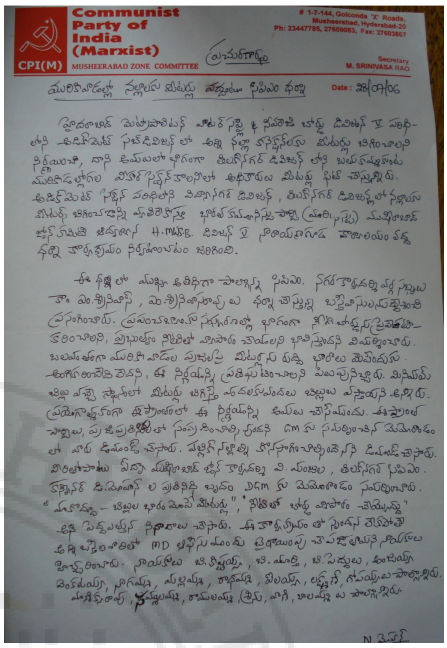
నారాయణగూడ వాటర్‌వర్క్స్ కార్యాలయం వద్ద ధర్నా

నల్లాలకు మీటర్ల ఏర్పాటును వ్యతిరేకిస్తూ

సీపీఎం ధర్నా

అంబర్‌పేట, జులై 28 (న్యూస్‌టుడే): నిరంతర నీటి సరఫరాలో పథకంలోభాగంగా తిలక్‌నగర్, విద్యానగర్ డివిజన్ల పరిధిలోని మురికివాడల్లో నల్లాలకు మీటర్లు బిగించడాన్ని వ్యతిరేకిస్తూ సీపీఎం ఆధ్వర్యంలో జలమండలి నారాయణగూడ కార్యాలయం ముందు ధర్నా నిర్వహించారు. సీపీఎం నగర కార్యదర్శివర్గ సభ్యులు ఎం.శ్రీనివాస్, ఎం.శ్రీనివాసరావులుతో సందర్భంగా మాట్లాడుతూ ప్రపంచ బ్యాంకు సంస్కరణల్లో భాగంగా జలమండలిని ప్రైవేటీకరించాలని, ప్రభుత్వం నీటితో వ్యాపారం చేయాలని భావిస్తోందని విమర్శించారు. మురికివాడల్లోని ఇళ్లకు సైతం మీటర్ల బిగించి అధికభారం మోపేందుకు ప్రయత్నిస్తోందని, ఈ నిర్ణయాన్ని ప్రజలు ప్రతిఘటించాలని కోరారు. నిరంతర నీటి సరఫరా చేసినా పబ్లిక్ నల్లాలను కొనసాగించాల్సిందేనని పేర్కొన్నారు. వీరితో పాటు ఐద్వా ముషీరాబాద్ జోన్ కార్యదర్శి వి.మంజుల, తిలక్‌నగర్ సీపీఎం కన్వీనర్ డి.మోహన్‌ల బృందం జి.ఎంకు ఈ విషయమైవినతిపత్రం సమర్పించారు. కార్యక్రమంలో సీపీఎం నాయకులు బి.కిష్టయ్య, బి.మూర్తి, బి.పెద్దులు, అంజయ్య, వెంకటయ్య, నాగమ్మ, మల్లమ్మ, రాధమణి తదితరులు పాల్గొన్నారు.

Protest by CPI-M against reforms in the Water Board



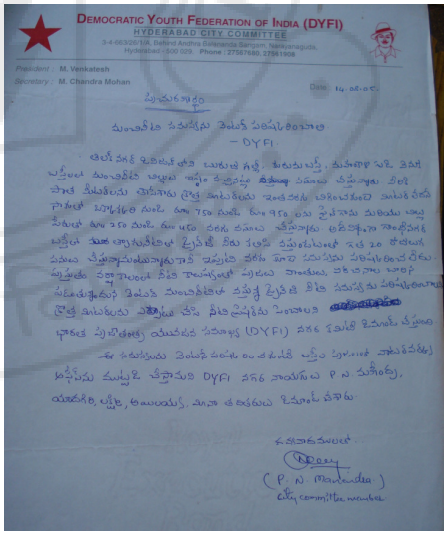
Communist Party of India (Marxist)

CPI(M) MUSHEERABAD ZONE COMMITTEE

M. SRINIVASA RAO

CPI-M memorandum to HMWS&SB demanding water for slum areas

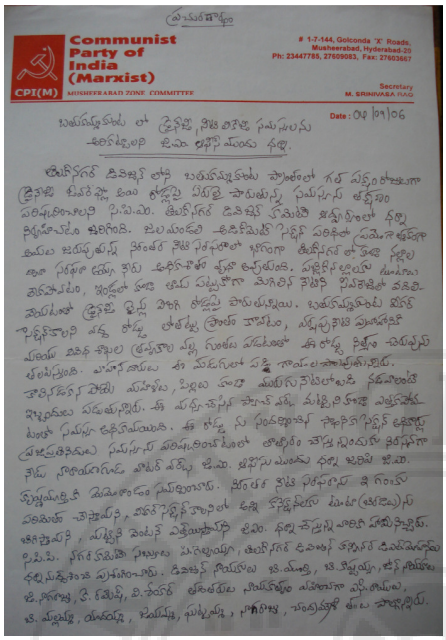
CPI-M protest against water meters which according to them is taxing the poor



DEMOCRATIC YOUTH FEDERATION OF INDIA (DYFI)

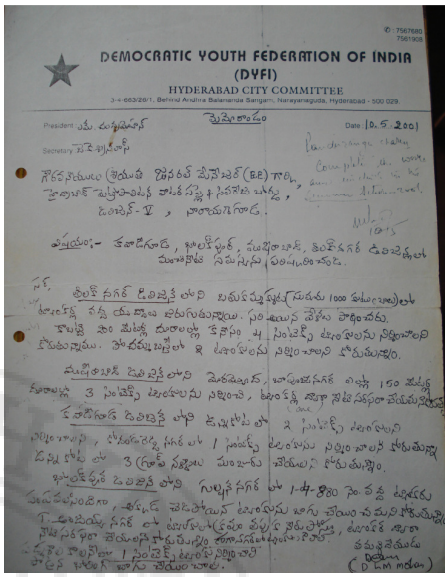
HYDERABAD CITY COMMITTEE

Request letter for solving different water related problems in the study area



Communist Party of India (Marxist)
CPI(M)
MUSHEERABAD ZONE COMMITTEE
1-7-144, Golconda 'X' Roads, Musheerabad, Hyderabad-20
Ph: 23447785, 27609083, Fax: 27603667
Secretary
M. SRINIVASA RAO
Date : 04/09/06

Dharna in front of General Manager office for solving problem of water



DEMOCRATIC YOUTH FEDERATION OF INDIA
(DYFI)
HYDERABAD CITY COMMITTEE
3-4-662/26/1, Behind Andhra Balamandir Sangam, Narayanaguda, Hyderabad - 500 029.
Date 10.5.2001

Memorandum submitted to HMWS&SB Adikmet section, to solve water problems in the slums

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