Necessity of Land Use Regulations and Governance for human safety – Case Study of Bhopal Gas Tragedy, 1984

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Abstract

It has been thirty years since the world’s worst Industrial disaster took place in Bhopal on 3rd December, 1984. While the victims still await justice, the cause of the leak of the poisonous Methyl Isocyanate is still not clear. While laws such as the Environment Protection Act, 1986 have been passed to avoid such disasters in future, the Bhopal Gas Tragedy could have been scaled down or even averted, had the factory of Union Carbide been allotted land in the obnoxious industry land use as per the Bhopal Development Plan, 1991. The document had legal significance under the Madhya Pradesh Nagar Tatha Gram Nivesh Adhiniyam, 1973. Instead, the factory was set up in the land allocated for ‘general industry’, surrounded by residential and commercial land. Along with the residents of the nearby area, Arif Nagar, the neighbouring land attracted migrant worker population due to industry. This led to the high number of affected people in the disaster. There was a requirement of an industrial license which was granted to Union Carbide by the Central Government for setting up the pesticide plant in the general industry zone. Going against the advice of the then local authorities, the plant was erected in the controversial site, leading to the disaster. Moreover, the only legal provision the company could be tried under was the Indian Penal Code.

Land Use Plans and Governance is the essential combination which leads to the development of a city. Therefore, the legal framework which empowers these institutions and instruments needs to be watertight and at the same time safeguarding the rights of the people for whom it is created. Using the Bhopal Gas Tragedy as a case study, this paper aims to explore the significance of the same in the case of human safety – health, social and economic.

Keywords: Land Use Regulations, Governance, Human Safety, Bhopal Gas Tragedy 1984, Laws, Environment
1. Introduction

The United States refers to human safety or Public safety as the welfare and protection of the general public. It is generally expressed as a governmental responsibility to minimize the risk to the citizen from natural or human induced danger and uphold the traditional functions of law and order. In India, Public safety is ingrained into the legal fabric of the country. Provisions for Public safety standards are found in the Bureau of Indian Standard Act, 1986 and Right to Information Act, 2005 in order to ensure they are being followed in every aspect of life.

With the high rise in urbanization, urban environments are becoming more and more vulnerable towards disaster. During planning a city, we take a projected population into account. In the case of developing countries like India, due to the high disparity in urban and rural standards of living, there is a large influx of people into the cities from the rural hinterlands. This gradually leads to mushrooming of slums, high pressure on civic infrastructure and makes the urban citizen more vulnerable towards imminent disaster. For the State to prevent such danger, the primary step is strengthening the urban governance system and urban planning interventions.

According to the National Disaster Management Report, Land use zoning is required to suggest desired development of the town and helps in achieving its vision of physical and economic growth. It is supposed to regulate the kind of buildings to be constructed, their shape, size and height. It also protects habitat from non-conforming uses and properly channelize all types of use at their allotted locations.

Land Use Planning in urban areas is done to enable a sustainable and holistic development of a city. It is done such that there is equitable distribution of resources, both physical and social. The URDPFI rules set the guidelines for every person to have a healthy home and work environment. It is also done to safeguard public safety such as separating heavy industrial land use away from the residential land to enable health and environmental security. Governance is the process which unites the government and the people. Through policy and public intervention, urban governance ensures the proper functioning of the city infrastructure, law and order and to an extent controls the market forces in the city.

Therefore, to ensure human or public safety, it is essential that the urban Governance structure and the Town Planning especially the Land Use zoning go hand in hand and focus on transparency, accountability and effectiveness. One example to effectively show the relationship is the case of the Union Carbide MIC disaster in Bhopal on 3rd December, 1984. The case is commonly known as the Bhopal Gas Tragedy and is held as the largest industrial disaster in the World. While the case involves specifically industrial hazards, there are socio economic aspects which come under the purview of land use regulations and Governance.
2. Bhopal – A chronology of events (Independence to 3rd December, 1984)

a. Independence

Bhopal is the capital of Madhya Pradesh. Before Independence, Bhopal was a princely state belonging to the Nawabi rule. Post Independence, Bhopal was annexed to the Indian Union. During the States Reorganization Act, 1956, Bhopal was integrated into Madhya Pradesh and made its capital. Bhopal had its own Municipal Council and after adding the surrounding villages to the then city limits, the total Municipal limit was 71.23 sq. km by 1975. The population of Bhopal city was 102,333 in 1951. (Town and Country Planning Department, 1975) It was an agrarian economy.

b. Advent of Industrialization (1951-1966)

The First Union Government led by Pandit Jawaharlal Nehru focused on industrialization. Through Industrial policy resolutions of 1948 and 1956, foreign enterprises were invited to set up factories in India (under the Factories Act, 1948). Union Carbide Corporation (UCC), which had already set up factories in India of Eveready Batteries in 1934, was granted license to set up a pesticides factory in Bhopal in 1956. (Peterson, 2009) The initial factory was situated outside the then city limits. Due to the employment generated by the factory and other industrial enterprises such as BHEL in Bhopal, it attracted huge population which migrated from the surrounding regions. Therefore, within a decade, the population increased up to 2,22,948. (Shrivastava, 1996) The city Plan, unable to foresee such a massive influx of people could not plan ample infrastructure and housing to accommodate the migrated population. This led to the mushrooming of slums and illegal settlements in the outskirts of the city and around the Union Carbide Plant. Nearly 20% of the population of the city resided in 156 slum colonies. (Shinde) By now, due to the Companies Act, 1956, Union Carbide had a subsidiary company in India called Union Carbide India Ltd. (UCIL) which was owned jointly by UCC (Majority share of 50.9%) and The Indian Government.

c. Union Carbide in Bhopal (1966-1975)
As per the Green Revolution in India, the Indian market for fertilizers and pesticides expanded as government adopted a range of policies, including efforts to increase yields and reduce post-harvest losses of crops to pests, to make India self-sufficient in food. Union Carbide had become popular with its pesticide brand of Sevin. The production of pesticides in India was 14,000 metric tonnes in 1966. This was below the generating capacity expected by the Government. UCIL had set up an Agricultural Products Division. UCIL applied for a license to produce fertilizers in India. (Shrivastava, 1996)

The Government of India approved the license to UCIL to build a fertilizer/pesticide formulation Plant in Bhopal. As per the Zoning regulations then, land in the Kali Parade area of Bhopal was leased out to UCIL as it was away from the city in the industrial zone. The lease was for 99 years. The site was favourable for industry as it was relatively unpopulated, had a local water supply due to the two lakes of Bhopal and had the Bhopal Main Railway Station around 2 miles away. The Bhopal railway line connected the city to the National Capital of Delhi. (Peterson, 2009)
According to laws such as the Foreign Exchange Regulation Act 1973, there were tight controls over the cash flow of UCIL, strict requirements such as using Indian substitutes of chemicals and training Indians to fit in the hierarchy of the company. The Water and Air Pollution Acts were passed in 1973 but they focused on penalties in case of pollution. They did not prescribe standards to be met by the industries or health risks due to emissions by the factories.

d. Union Carbide in Bhopal (1975-1984)

Due to heavy competition from the domestic pesticides market, UCIL applied for a license to manufacture Methyl Isocyanate (MIC), one of the most important ingredients in manufacturing Sevin. The license was granted in 1978 and the Manufacturing Plant was set up in 1981. (Shrivastava, 1996).

Figure 3 Existing Land Use of Bhopal in 1973 (Town and Country Planning Department, 1975)

Between 1952 and 1983, Bhopal Municipal Board had been upgraded to Municipal Council with an IAS Officer as the Chief Administrator. In 1975, the City Development Plan for Bhopal was released after the start of the Plan process in 1973, which had legal significance under the Nagar tatha Gram Nivesh Adhiniyam, 1973. In the Bhopal Development Plan, the new municipal limits were given and a zone 15 miles away from the city limits was prescribed for hazardous industry. The factory was then situated in area allocated under general industry land use. The local authorities wanted the factory shifted as by now there was a huge informal urban agglomeration around the factory. The request was turned down
by the State Government. In 1983, Bhopal Municipal Council became Bhopal Municipal Corporation with a total of 56 wards. Bhopal Development Authority was a parastatal authority which focused on development in the urban fringes. The population of Bhopal in 1981 was approx. 6.71 lakh. The Madhya Pradesh Act no 15 of 1984 was the Patta Act which conferred leasehold rights on landless lands in the State of Madhya Pradesh. While the site of the factory was not shifted, the illegal squatters around the factory in the slums of Arif Nagar and J.P. Nagar were given leasehold rights in 1984 in the month of April.

In the mid 1980s, there was widespread drought and famine in India. It increased the indebtedness of farmers which led to highly decreased demand for pesticides. UCIL went into heavy losses and was contemplating sale in 1983. The Plant was in a deteriorating condition and many of its safety procedures were compromised as cost cutting measures. On the night of December 3, 1984, due to water entering the Storage Tank which held the poisonous gas MIC, the gas escaped and spread over the city, leaving thousands dead in its wake and thousands more maimed for life. (Shrivastava, 1996)
3. Aftermath
   a. Rehabilitation

In the wake of the Tragedy, there was forced migration outwards of Bhopal. Litigation started for compensation claims and conviction of the accused, a process which is still going on in 2015. From an industrial hub, Bhopal slipped into rehabilitation mode and started focusing on treatment of the wounded and alternative occupations for the gas affected. Industrial units were opened in Govindpura and Mandideep, close to Bhopal. Housing was provided for the gas affected widows. Hospitals for the cause were opened in Bhopal to cater specifically to the gas affected people. The biggest hospital is Bhopal Memorial Hospital and Research Centre.

   b. Legal

A number of laws were passed in the wake of the disaster, most of which were under environment and Industries.

- The Factories (Amendment) Act, 1987
- The Environment Protection Act, 1986
- The Manufacture, Storage and Import of Hazardous Substances Rules, 1989
- The Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008
- Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996
- Public Liability Insurance Act, 1991
- Disaster Management Act, 2005
4. Assessment

Figure 5 Bhopal Development Plan 1975. UCIL was put under general industry (Town and Country Planning Department, 1975)
a. Urban Planning

One of the most important aspects of Urban Planning is to enable economic growth. But it should be done conforming to the requirements of physical and social growth as well. Foreseeing the future trend and proposing for the same today effectively is what is required of a Development Plan. Two guidelines utilized for this are the Model Town and Country Planning Act, 1960 and the UDPFI guidelines, 1996.

The challenge is to decide compatibility and effective usage of land. In the case of Bhopal, when land was allotted to UCC, the city limits had not expanded till JP Nagar. The site was selected for its proximity to industrial requirements of water supply, considerably flat terrain and connectivity to transport infrastructure. On comparing the land use patterns in Bhopal between 1961 and 1973, it is to be noted that the zoning is gradually being proportioned. Although residential land use is being reduced, the amount of land under amenities and industries has increased. Residential and transport land has reduced. This was ironic as the main problem faced by the city was homelessness. While the land under residential was high, it was low rise development, leading to inefficient land usage.

Usually, the city expands towards the source of employment, a factor as seen in most of the city models.

While an attempt at development was created in the Capital Project of Bhopal in Arera Hills and Idgah Hills, it catered mainly to the higher classes of society. Land rates being comparatively higher in the Capital Project, the lower income people were forced to settle around the factory where there was nil to shortage of public infrastructure of water supply, sewage, transport, health facilities or telecommunication. Moreover, the Project was far from the industries with no effective public transport facilities. While land under amenities increased, there was a noticeable shortage of health facilities and doctors for a city which had a large chemical factory and therefore, was constantly at health risk. At the time of the mishap, there were 1800 hospital beds and 300 doctors. (Shrivastava, 1996)

Urbanization is a major challenge for Planners. Although a considerable projection is always taken, a sudden high influx of people can lead to haphazard and regressive planning. In Bhopal, UCIL was set up for tapping the economic potential of Bhopal. Due to high rural urban disparity in the 1960s, there was a
heavy unprecedented influx of people into Bhopal. Moreover, droughts, famines and food shortage led to people leaving agriculture for other occupations. According to Census data of 1961 and 1971, the number of pucca dwellings had reduced by 13.6% and kutcha housing had increased by 4.5%. This leads to the assessment that slums had increased drastically in the city. Although the Second Five Year Plan (1956-61) focused on Housing for the poor such as the Industrial Housing Scheme, there are no records found for that in the case of UCIL. One reason for this may be that UCIL and the surrounding areas did not come under the purview of the Municipal Corporation limits. The case may be argued that due to the 74th Constitutional Amendment 1992 not being passed by then, the Town Planning Authorities had no clearly stipulated contribution in providing affordable housing, in spite of being the Governing Body at local level. Nevertheless, this led to the formation of more slums in the Factory area.

Observations

While land use zoning focuses on the broad sectors such as residential and commercial use, they should delve into the sub sectors such as mixed residential and retail commercial use, which are already laid down in the UDPFI guidelines, 1996. This will lead to mixed use planning, reduce ‘ghettoisation’ or pockets of homogeneous socio cultural economic fabric. It will lead to equitable distribution of resources and reduce social tensions to a large extent. The gas affected people were mainly squatters belonging to the informal sector who had no access to the basic infrastructure of the city. The people who lived in the Capital Project were protected by the natural topography of the lakes and the hills. Moreover, they had access to the entire urban infrastructure and therefore, a better quality of life. They had better health facilities. If the housing and transport infrastructure was such that it catered to all strata of society, the poor section of society could be accommodated in the Capital Project and the risk of getting affected by the gas could be reduced to a minimum. The LIG sector could have alternative occupations to the risky factory environment. The HIG sector could have access to the benefits the Informal sector had to offer. The mutually benefitting scenario would have led to a sustainable city fabric.

Having stated this, land usage relies on the market forces unless acted upon by development control regulations (DCR). While every city has its own DCR framework, few DCRs act with the target of mixed use planning. In the case of Bhopal, the DCRs limited the building height, leading to low rise high horizontal development, or inefficient land usage. Instead, there should be Development model regulations which make LIG housing compulsory such as the Ghaziabad Development Model already executed, which makes it compulsory for the developer to construct LIG/EWS housing on 20% of the land.

Another regulation as stated in the National Disaster Management Toolkit (Management, 2012) is the proposal of urban agriculture or a green buffer around hazardous territory. This will ensure no residential development in such areas and will protect the people from any unforeseen disaster. According to Environment clearances required for industry siting as given in the UDPFI amended after the Bhopal Gas Tragedy in 1994, there should be a clear buffer via greenery or topographic feature from the site of the factory. Other regulations require the industry to be sited at the lowest point of the area and separated from the residential development by a topographic feature such as a hill. The green
buffer zones can be used for plantation agriculture or agriculture which will ensure the land does not go waste.

b. Laws and Governance

A sound Governance structure is required for effective running of urban machinery. In the case of Bhopal, we see the deficiencies in the Governance structure which allowed the Bhopal Gas Tragedy to occur.

   a. Granting of license for MIC manufacturing plant

UCIL applied for a license for a MIC manufacturing plant in their Bhopal factory in 1977. Owing to the country going through a State of National Emergency at the time, they obtained a license from the Central Government, bypassing the Local bodies and the State Government totally. While this was a rare case scenario, it happened nevertheless.

Moreover, there were no strict regulations involving the siting of industries. By the time the license was granted, there was a considerable slum population living around the factory. The UDPFI guidelines were amended in 1994 to adhere to environmental norms for siting the industries. Therefore, there were no laws limiting the Government’s scope in allowing the construction of the MIC plant which led to the disaster. The Pollution Board in Bhopal could only penalize for creating pollution but could not lay down standards nor have a say in the siting of an industry as per environmental hazards.

   b. Granting Patta rights

The seriousness of the gas Methyl Isocyanate (MIC) was not known to the people. Although scientists had proven Sevin to not be dangerous by ingesting a few particles of the powder, its manufacture component was deadly. UCIL had played it down by calling it a ‘mild irritant to the eyes’. There was no Act or rule which required UCIL to show its chemical equipment and the chemical processes running in the factory along with the side effects. At the time of the disaster, doctors did not know how to treat the gas affected people as they had been given an extremely mild picture of the gas and its effects.

People living in slums were used to living in hazardous conditions. Although the nature of the impending hazard was not known to anyone, living beside a factory did not worry them or lead to any concern. Therefore, when the higher authorities were advised to evict the people from the slums around the factory by the local authorities, they did not heed the warnings. Therefore, granting Patta rights was seen as a win-win situation with the coming elections for the authorities and land ownership rights for the poor. While the discretion for this was with the State Government, there was no protection through environment laws or an interim tier of Government connected to the local administration who could override the decision by a joint consensus that could have prevented the Pattas to be granted at the slums of JP Nagar and Arif Nagar.

   c. No decentralization of Local Government
During the UCIL and Bhopal Gas tragedy phase, the 74th Constitutional Amendment Act 1992 had not been passed. The BMC was a service delivery mechanism without any regulatory powers. An effective governance mechanism requires an empowered regulatory authority at local level which was not the case in the Bhopal Gas Tragedy. All the crucial decisions were taken by the Central Government in granting the licenses and the State Government in granting the Patta rights. While the Bhopal Development Authority (BDA) and the Bhopal Municipal Corporation (BMC) had advised against the decisions, they could not affect these decisions due to reduced powers.

Observations

In Indian Urban Governance, we have a District Planning Committee (DPC), a body which consists of officials at the Municipal Level, the District or Zilla level and the State level. The Chairman heads the body which prepares the District Development Plan according to the 73rd Constitutional Amendment Act, 1992 and 74th Constitutional Amendment Act, 1992. The primary duty of the body is to decentralize power in the State and work on a holistic development city onwards to State level decisions and funding mechanism. During the time of the Bhopal crisis, there was no such body. Therefore, city level decisions were taken entirely by the State Government. Although the Local Government had warned against granting the Patta Rights, reduced powers of the ULB could not prevent the process.

The challenge the Governance system faced during the time was no decentralization of Government beyond State level. While ULBs and Development Authorities were seen as service delivery agencies in Municipal limits and the outgrowths only, they faced issues of lack of funding and limited autonomy. Therefore, the issues faced by people due to the factory which could be perceived at local level could not be attended to at the same level and was not conveyed effectively to the higher state of administration. This led to erroneous decisions which the Local Administration could not rectify.

5. The Situation Today

While the country has seen reforms in the aftermath of the tragedy in both the legal and governance aspects, India still has a long way to go until safety is firmly established in the Urban Planning fabric. While the laws which were not there before have been put in place, the challenges lie in the accountability and the implementation framework.

a. Legal reforms which had an impact on land use regulations:
   i. The Environment Protection Act, 1986 - The main reform came through this Act as it became an umbrella legislation which covered the loopholes of many existing laws with environmental impacts. The necessity of the Environment Impact Assessment of any project before sanctioning it was an improvement on industrial hazards. Moreover, the Act stressed on sustainable development by conserving the environment in every phase of development.
   ii. The Environment Protection rules, 1986 – This laid down the procedures required to set standards of emission or discharge of environmental pollutants.
iii. The Manufacture, Storage, and Import of Hazardous Rules, 1989 – According to this rule, it describes the authority to be set up in the above mentioned context and inspection regulations.

iv. The National Environment Appellate Authority Act, 1997 – The Act has been created to hear appeals with respect to restriction of industries with respect to classification of industry subject to safeguards laid down under EPA.

v. The Environment (Siting for Industrial Projects) Rules, 1999 lay down detailed provisions relating to areas to be avoided for siting of industries, precautionary measures to be taken for site selecting as also the aspects of environmental protection which should have been incorporated during the implementation of the industrial development projects. This has been enumerated in the UDPFI guidelines amended in 1994 so as to ensure they are followed.

vi. 1974 - The Water (Prevention and Control of Pollution) Act establishes an institutional structure for preventing and abating water pollution. It establishes standards for water quality and effluent. Polluting industries must seek permission to discharge waste into effluent bodies. The Central Pollution Control Board was created under this Act.

vii. 1948 – The Factories Act and Amendment, 1948 was amended in 1987 to meet concerns of working environment of factory workers and expanded the application so as to meet the requirements of hazardous processes.

viii. The Air (Prevention and Control of Pollution) Act 1981 amended in 1987 as The Air (Prevention and Control of Pollution) Amendment focuses on the control of air pollution and its abatement. The Act provides for central and state pollution boards as agencies for this cause and meets grave emergencies of air pollution.

ix. Disaster Management Act, 2005 - This Act laid down the provisions for preparing for disasters, both natural and manmade. It covers every potential disaster India may face and has laid down guidelines to combat the same.

The above laws had a direct effect on siting and compatibility of land use. The Disaster Management toolkit has a separate chapter devoted to urban planning in which it enumerates all the prerequisite requirements to be fulfilled in order to judge the compatibility of a certain land use in an area according to the disaster the region is vulnerable to.

b. Governance reforms

The landmark reform was in the form of the 73rd and 74th Constitutional Amendment Acts, 1992. Through this, decentralization in the State Government to provide more autonomy to the Urban and Rural local Bodies was ensured. Moreover, provisions were laid down for equitable development in the form of Ward Committees, District Planning Committees and Metropolitan Planning Committees. Through these bodies, every tier of Government from the State Level to the Local Body level was involved in the District or Metropolitan Development Plan.

Another important aspect of the 73rd and 74th CAA was the 11th and 12th Schedule which clearly laid down the functions of the Rural and Urban Local Bodies. Along with this, resource mobilization to an extent was addressed by providing for the State Finance Commission which allocates the funds for the ULB. Before the 73rd and 74th CAA, there were no compulsory requirements for elections to the ULB and Panchayati Raj Institutions. With the reforms, not only is there the provision to the constitution of the
Local bodies and regular conduction of elections, it also restricts the State Government from interfering in the election procedure.

The target of the Reforms was to break the image of the ULB as a service delivery agency and portray it as a comprehensive governing body. Through functions such as Urban Poverty Alleviation and preparation of plans for economic development and social justice in the Twelfth List, the ULB has many more sectors to govern than simply provide municipal infrastructure. Therefore, with functions such as economic and social development, industries and other potential employment come under the purview of the local government as well.

6. Governance and the people today:

In the aftermath of the tragedy, a number of reforms came about. While they closed many loopholes in the legislation, there is still not a satisfactory enforcement and implementation mechanism in place. While we have environmental guardians like the National Green Tribunal (NGT), the NGT has become famous for creating more roadblocks than progress in the case of economic development.

Apart from industrial hazards, there are more disasters that a country can face, both natural and manmade. While we finally have a law (The Disaster Management Act, 2005) to combat disasters, there is no clear implementation framework to oversee the laws being followed. While construction regulations require the following of the Factor of Safety or conforming to the National Building Code, 2005, there are many redundancies or loopholes which people utilize to justify inefficient building design. Later on, these buildings become potential danger zones as they are unstable or not safe buildings in essence. In our country, many of the implementation sanctions are left to the discretion of the officials who can be manipulated instead of following a prescribed format. Therefore, transparency of the system needs to be worked upon. E-governance should be encouraged where data manipulation is at a minimum and sanctions can be given only after satisfying the prescribed evaluation framework.

As mentioned before, the land prices in India left mainly dependant on the land market, it creates pockets of development where the system is skewed. After the Seventh Year Plan, the Private sector emerged as the housing development market with the Government acting as the facilitator. (Board) As the Private sector was profit driven, the convenient land parcels are provided to the HIG and MIG while the LIG is usually left to fend for itself. This again reverts to slum formation in unhygienic places with low social and economic quality of life. As they are used to living in hazard prone areas, they do not heed warnings if asked to relocate. This type of ‘ghettoisation’ is therefore, often responsible for high disaster casualties. After the Eighth Year Plan, the Government changed its agenda to become a provider of housing for the lower income categories while acting as a facilitator to the other income groups. While some development models have made it compulsory for developers to provide a specific percentage of housing for the EWS/LIG, many states are yet to follow suit. As it occurred in the case of Bhopal, warnings were issued from time to time regarding untoward incidents at the UCIL Plant. As the people living in the JP Nagar and Arif Nagar slums were used to living in deteriorating conditions, they did not pay heed to the warnings. The ULB not being an autonomous body back then, could not take
precautionary steps by relocating the slum dwellers. Moreover, the transport infrastructure not being up to the mark then added to the people not wishing to relocate to places farther from the work place.

![Figure 8 Bhopal Development Plan 2005 (Corporation)](image)

Although we have had the Constitutional reforms granting autonomy to the ULBs and the JNURM to provide funding for urban infrastructure schemes, there are still grave issues that need to be fixed in terms of accountability and implementation.

Due to the existence of parastatal authorities with no clear demarcation in most cases, there is an overlap of services and regulatory framework. West Bengal is the only state which has conformed to all the requirements of the constitution of the ULB and the Parastatal agencies leading to minimum overlap in service and regulation. But, if we observe the case of Bangalore, Karnataka, there is a case of duplication and fragmentation in the number of agencies for a single service provision. Some of the agencies have the state level government in the hierarchy, involving the State Government, leading to the same scenario as was before. Therefore, while steps have been taken, ULBs still do not have complete autonomy, not only in funding but providing services as well. (Dasgupta, 2006)
In the case of Bhopal, people were aware of the repercussions of having a hazardous chemical plant next to their residences. As there was no avenue for citizen participation, people could not convey their fears to the administration nor have a say in the running of their own Government. The Citizen Charter is a very important provision which needs to be made compulsory for every service provision, especially now that there are Private Agencies who are outsourced the responsibility of providing infrastructure. As the taxpayers, the public need to be well informed of every public infrastructure service they are provided. At the same time, they should be assured of their safety by maintaining anonymity wherever necessary.

One important aspect of Public participation and effective governance is the ongoing case of Perumatty Gram Panchayat vs. Coca Cola in Kerala. The people complained of malpractices such as depleting the water sources of the village such as the groundwater and the river. Moreover, the toxic waste generated by the plant was not being disposed as per norms and was affecting the fertility of the land. The State Pollution Board ordered production to be stopped at the Plant for failing to comply with pollution norms. The Rural Local Body declined to renew the license of the company and effective public agitations led to the State Government siding alongside the people. As part of Public Liability, Coca Cola was given the option to run a water supply pipeline to the affected villages as well as decontaminate the land. As part of an equity measure, the Government suggested they draw as much water as a farmer tilling a land of 34 acres would require as that was the plot area of the Plant. (sanitation, 2010)

While some measures have been taken in the wake of the Bhopal Gas Tragedy, some deep issues still remain. One of these is the Government apathy towards disaster warnings as seen in the case of the Dockyard Road Building crash on 26th September, 2013. In this case, Municipal engineers had written constantly about the instability of the Babu Genu Market building, requesting the inmates to be vacated. While the warnings were not heeded to, tenants were allotted flats in August 2013 by the authorities. The building was owned by the BrihanMumbai Municipal Corporation (BMC), the ULB of Mumbai. Unauthorized construction was observed in the building. (Khandekar, 2013) This brings two points to light. One is that there needs to be strict provisions for constant inspection and evaluation of services and amenities provided to the public by the Local Administration. The second issue is that public participation which is currently at a nascent stage has to be given legal significance. Unless this is done, the public is never paid attention to although they are stakeholders to the amenities and are the taxpayers who receive the outcome of the services allotted to them.
Corporate Social Responsibility (CSR) till now was not mentioned in the Companies Act, 1956. With the Companies Bill 2009, the 21st report of the Ministry of Corporate Affairs says that ‘there was no mention in the earlier Companies Act about corporate social responsibility. We are just mentioning that there will be a Corporate Social Responsibility Policy in each and every company beyond a certain limit, which are profitable companies and which are of certain size’. This will make every company, subject to requirements as per the Companies Bill, 2009, in India socially, ethically and legally responsible to the public. (Pandey, 2011) The downside of this rule, especially in the case of Bhopal is that Indian Companies are liable under this Act. Therefore, Dow Chemicals, who has taken the responsibility of UCC, may not adhere to CSR due to not being an Indian Company.

7. Conclusion

The Bhopal Gas Tragedy was a wakeup call on many fronts. It opened up the callous attitude developed countries had while setting up industrial bases in developing countries. This is seen from the lower wages and safety procedures followed in UCIL Bhopal as compared to the UCC Plant in Virginia. It led to the amendment of several laws- Industrial, environmental and corporate liability. Although the final verdict on the tragedy is far from satisfactory due to the laws back then, there have been major changes made in the industrial legal safeguards to ensure the prevention of another tragedy like 3rd December, 1984. Bhopal changed its image from that of an industrial hub to an administrative and educational hub. The living standards of Bhopal have improved since the tragedy although most of the development is in the Capital Project area. The public services and amenities have become regular and efficient as compared to 1984. The Industrial zones of Govindpura and Mandideep have been separated from the residential zone although development is growing towards these locations, as per the urban sprawl diagrams. The pollution levels of Bhopal, especially the lakes are regularly monitored by the Madhya Pradesh State Pollution Control Board (MPSPCB). Many slum rehabilitation schemes have been executed in the city by BMC with the help of the Basic Services for the Urban Poor(BSUP) and Madhya Pradesh Urban Services for the Poor(MPUSP) schemes. Through MPUSP, 21 slums on municipal land are undergoing in situ up-gradation in identified slums for improving water supply, drainage, roads, street lights, waste management and sanitation and community social assets with public participation. Through BSUP, 10 projects of Housing and Infrastructure and 2 projects of Integrated Development of Slum and Poor Locality have been implemented. (Shinde)

The remains of the UCIL Plant are still at the site. The slum of Arif Nagar still exists. Although there is a notice put up which prohibits people from entering the site, people illegally enter the property in spite of the toxic waste lying around. Dow Chemicals refuses to take responsibility for the incident and hence, refuses to remove the contaminants. The groundwater in the site of the Plant has become toxic. Due to this, Arif Nagar cannot draw water from its wells. As the tragedy is an international issue with neither side taking the responsibility, a decision is yet to be taken.

Due to the reforms, both legislative and governance, there is more autonomy and accountability today. But, the enforcement and implementation mechanism has not improved. While we have agencies at the Central Level put up to monitor pollution levels in the country, they are understaffed and on the verge of extinction as the vacant positions are hardly filled. While new agencies are created for efficient
service delivery, too many agencies for a single service have led to redundancy and overlap, leading to less accountability. Although the ULB has more autonomy, many parastatal agencies hamper the functioning. Although there has been devolution of powers at State Level, the power to make new agencies still rests with the State Government. This leads to many unnecessary agencies which induces fragmentation and redundancy.

To encourage an agency to perform, there has to be incentives to perform. China, for example, has a rating system according to which they get a better rating and more funds if they allocate a specific percentage of the entire housing development for the EWS/LIG. The South African government has reduced the number of grants, but all focused respectively on infrastructure and restructuring at the local level. The Citizen Charter, which originated in London, too can act as an incentive for the ULB as the public demand will help it to perform better in the areas where the services are lacking.

In City Planning, the Land Acquisition Act, 1894 was amended due to which the Collector had to justify ‘public purpose’ before acquiring land for said purpose. Currently, the Land Acquisition, Resettlement and Rehabilitation Bill is undergoing modifications so as to be fair to both the people and encourage development. During the preparation of any Perspective or Development Plan, the public is invited to voice their objections, which the Planning Committee then works on to arrive at a consensus. Although Land Acquisition is a process wherein development is more flexible as the entire land is owned by the Government, the Authorities should explore other means of acquiring land for development e.g. The Gujarat Town Planning Scheme. This will prevent people from losing their livelihood and joining the teeming numbers of urban poor and settling in slums, thus increasing the number of people prone to hazards. Land Use regulations are dictated by the terms of UDPFI, 1996 which differentiates compatible and incompatible land uses. To take the urban outgrowths into consideration, Regional Plans are proposed. These documents do not have independent legal significance as Master Plans do. Instead, they have significance under the regional or Metropolitan authority such as Delhi Development Authority (DDA) or Mumbai Metropolitan Regional Development Authority (MMRDA). As these documents take a holistic view, they should be given legal credibility.

It has been thirty years since the Bhopal Gas Tragedy. There has been progress. But there is a lot more to do before human safety can be considered a reality in our country.

**Bibliography**


