URBAN BASIC SERVICE DELIVERY WITH REFERENCE TO SANITATION

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Abstract

Expectations from the government by the citizenry and various supranational organizations led to the birth of different paradigms of service delivery processes. Countless economic, social and ecological problems in the urban arena brings challenge for the urban local body and the government is to provide basic services, create a higher rate of access for citizens and the provision of quality services. Aizawl is emerging as a busy urban area with population booming. This entails several challenges in provisioning basic services. The objective of this paper is to study urban basic service especially on the sanitation and waste management in Aizawl.

Keywords: s*olid waste, cleanliness, sanitation, sewerage, segregation, service delivery*

Introduction

Traditional notions of public administration is that it is often thought as rigid, inapproachable, serving its own interests, the tendency to build an empire, red-tapism and irrational. Wilsonian values of politics-administration dichotomy encompass the domain of the public administration arena since 1887 who has proclaimed that, 'Administration is removed from the hurry and strife of politics.' But this paradigm has given birth to subsequent

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paradigms with radical changes from the predecessors. As an activity, public administration co-exists with the political system, it is the action part of the government to fulfill the desires and goals set by the political decision makers. Lately, there have been constant pressures on the government from the citizens as well as from various international or supranational organizations to provide better services, efficiently and economically along with a restructuring of the governmental systems (Basu,2015) such as minimizing government and maximizing governance and the hollowing out of the state. New Public Management symbolizes the idea of transforming the values of public service delivery towards efficiency, markets and managerialism, this has been known as 're-inventing government' (Osborne and Gaebler, 1992) with a theme that private sector management techniques, market principles and business may be transferred from the private sector into the public sector. World Bank since 1992 (World Bank, 1992) is trying to invigorate better service delivery frameworks insisting on the developing countries to adopt 'good governance' with a bundle of many good things including universal provision of the basic service. "People now place their hope in God, since the government is no longer involved in such matters"(Narayan, 2000). Indeed, it is all too clear that when governments perform poorly, resources are wasted, services go undelivered, and citizens—especially the poor—are denied social, legal, and economic protection (Grindle, 2002).

The UN Habitat Agenda (UN Habitat: 1996) provides the following definition of local basic services: "Basic infrastructure and services at the community level include the delivery of safe water, sanitation, waste management, social welfare, transport and communication facilities, energy, health and emergency services, schools, public safety, and the management of open spaces." Urban local bodies (ULBs) are traditionally mandated

to undertake basic civic and regulatory functions and to take care of the infrastructural service (Rao, 2015). The 12th Schedule of the Constitution of India has entrusted public health, sanitation, conservancy and solid waste management to the urban local body. Public health and sanitation also comes under the jurisdiction of the state list (list 6) and the state legislation.

During 1990–2012, around the world 2.5 billion people do not have access to improved sanitation facilities. In 1990, 49% of the world's population have access to sanitation which has increased to 63% in 2010 and 67% in 2015 (UNWater). There are still 46 countries where less than half the population has access to an improved sanitation facility (UNICEF: 2014). Throughout the world, every 20 seconds, a child dies as a result of poor sanitation. In 2015, 39.6% of the Indian population have access to improved sanitation and 62.6% and 28.5% of urban and rural population have access to improved sanitation facilities (World Bank).

The importance of this aspect of basic service is felt by the nations around the world which is reflected through Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs). MDGs goal number seven which is known as 'Ensure Environmental Sustainability,' Target 2 was, 'Halve by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation,' which has been achieved in 2010. The SDGs goal number six is 'Ensure availability and sustainable management of water and sanitation for all' with targets to achieve by 2030 such as - achieve universal and equitable access to safe and affordable drinking water for all and achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations. It also seeks the support

and strengthens the participation of local communities for improving water and sanitation management.

In the World Health Organization and United Nations Children's Fund's Global Water Supply and Sanitation Assessment Report-2000, sanitation were defined to include connection to a sewer or septic tank system, pour-flush latrine, simple pit or ventilated improved pit latrine, with allowance for acceptable local technologies. The excreta disposal system was considered adequate if it was private or shared (but not public) and if it hygienically separated human excreta from human contact (NSSO:2012). According to the Mizoram Urban Sanitation and Solid Waste Management Policy- 2011(MUSSWM:2011), sanitation covers the basic issues of environmental sanitation such as solid waste management, sewerage and drainage, industrial and other hazardous/specialised waste apart from management of human excreta. The above definition is mainly, but not entirely followed as the basis of analyzing and studying the realms of sanitation in this paper.

The objective of this paper is to assess the status of sanitation, sewerage and solid waste management in Aizawl with a view to bring out the inherent problems towards the overall progress in maintaining clean Aizawl and analyze the gaps in sanitation system.

Aizawl Municipal Area

Aizawl is now 126 years old. It has been the headquarters of Lushai Hills and the capital of Mizoram State. It was established on 25th February 1890 by the British as a fortified place and a military outpost. Aizawl Municipal Corporation area is delineated by the Govt. of Mizoram in 2008 (UD&PA, 2008) and initially, there were 69 localities and in the course of time more and more have been added to make it to 83 local councils

at present. The population according to 2011 census is 2, 93,416 lakhs, it constitutes 26.74 per cent of Mizoram total population, 50.56 per cent of the total urban population and the sex ratio is 1025 and literacy rate 98.36%.

Organization implementing Sanitation

Sanitation Wing, AMC manages urban sanitation in Aizawl, which has its office in Sikulpuikawn, Tuikhuahtlang. The office was occupied on 27th January 1989 as a subsidiary of the LAD which was then re-allocated to Urban Development & Poverty Alleviation Dept.(UD&PA) in 2006. The wing has been finally transferred to AMC because Solid Waste Management (SWM) is one of the functions within the ambit of urban local body as per the 74th Constitution Amendment Act (CAA). SWM in Aizawl is regulated by the Mizoram Municipalities Act, 2007, The Mizoram Urban Sanitation and Solid Waste Management Policy, 2011 and Municipal Solid Waste Rules, 2000 which was notified by the Govt. of Mizoram (GoM). At present, the numbers of employees in solid waste management are 203, Sanitation Officer–1, Asst. Sanitation Officer–1, Inspector of Sanitation–6, and Sweepers–195.

Historical Background

The first market in Mizoram began at Dawrpui, Aizawl(Old name-Aijal) on 9th January, 1910 under the aegis of the British who had stationed here in Aijal. People flocked to Aizawl from different parts of the state and gradually, it became the centre of trade and economic growth. With the formation of Mizo District Council (MDC) in 1952, a few street sweepers have been deployed and they collected garbage in a jute bag and were disposed off here and there on a cliff or a stream or it was ultimately burnt up. New Market, Dawrpui, was inaugurated by Mr. H.K. Bawihchhuaka, Chief Executive Member (CEM),

MDC on 1st August, 1965. Government became more and more conscious of sanitation and consequently a barrel for waste collection was placed in Dawrpui on 4th April, 1972 and service latrine was popular at that time. Excreta were collected in a tin and as soon as it was filled up, it was dumped in Saron Veng which was the site for excreta disposal. During those times, there were many scavengers and as many as 255 service latrines belong to the government and 145 belongs to private and the total service latrine was 400.

The Union Territory government started collecting waste/ garbage in the town on 15th January, 1973. One Tata-Mercedez Benz(TMB) Truck Waste was deployed for collection and disposal. And, in the next year two more were added which makes a total of three vehicles for performing the services. The 2nd October, 1977 was a milestone in cleanliness when LAD started observing Cleanliness Week for the first time in Mizoram, ever since the week has been regularly observed in the state. On 20th February 1984, the practising service latrines were converted into sanitary latrines and on 6th March 1986, mini-dustbin (a barrel cut in half) were placed in many locations for waste collection. At the same time, a cement-concreted mini-dustbin were fixed in many localities which were quite useful for promoting cleanliness among the people. However, people started using it for disposal of excreta and solid wastes which were rather difficult to handle for the workers, and due to this reason, the LAD demolished the fixed mini-dustbin in the same year.

With the demolition of mini-dustbin, the government began a garbage collection by vehicle on 12th May 1986 which was nevertheless a turning point in waste disposal. The timing of collection, which was post-morning meal, had been rescheduled to 6:00 a.m. in 17th June 1988. In total, there were 19 garbage dispose vehicles deployed in Aizawl on 16th April 2001, and since

21st August 2002, garbage was collected twice a day. More and more waste have piled up in the roads, accordingly, on 18th October 2006, the number of garbage trailers had been increased to twenty which were placed on road between Chanmari and Raj Bhavan, they were later removed due to old and outworn on 29th September 2009. SWM through modified Public Private Partnership (PPP) was started in Aizawl initially at 60 localities. An agreement was signed by Asian Development Bank (ADB), the Central Government and Govt. of Mizoram on January 2009. ADB doled out a loan amounting to Rs. 17.01 Crore, out of which 30% were to be repaid by Govt. of India (GOI). Today the fund sharing mechanism between AMC and Local Council is arranged as 80:20 per cent.

Dumping Area

Aizawl being situated in a hilly area is devoid of levelling land, and as such dumping of solid waste in a cliff or a side-slope was practised in and around nearby Aizawl. The first dumping area was located in Bawngkawn site near the ridge which was used during 15th January 1973 – 30th September 1982. Fast pacing urbanization has compelled shifting of the dumping area to the Tuirial road near Bung Bangla and this place had been occupied during 1st October 1982 – 24th June 1993. Different sites were utilized as dumping areas for quite some time such as Chawke Kham(ridge) between 25th June 1993 – 25th June 1994; Sairang road near the Police Training Centre road during 26th June 1994 – 9th April 1995 and during 10th April 1995 – 1st May 1997 - Sairang near Buichali bridge. Finally, the dumping area, which is still in operation, Tuirial Dumping Ground has been used since 2nd May 1997. Simultaneously, two other places, firstly, Muthi Dumping Ground during 10th June 1993–1995 and secondly, Sakawrhmuituai Dumping Ground, is in operation since 2nd May 2001. Muthi and Tuirial dumping ground belongs to Sanitation

Wing, AMC. In addition to the aforementioned dumping places, there were two night soil dumping areas which are no longer used such as Saron Veng in use up to 1st September 1984 and Tuirial river up to 16th April 1984.

Solid Waste and Sewerage in Aizawl

SWM in Aizawl is managed through a modified public-private partnership since September, 2010. Eighty three Local Councils are entrusted to collect and transport municipal solid waste from their jurisdiction to Aizawl Municipal Solid Waste Management Centre, Tuirial about 20 kms away from the city. The waste generated per day is 165.39 MT out of which 62.85 MT is bio-degradable, 64.50 MT is recyclable, which consists mostly of plastic, metals and paper products and the remaining 38.04 MT consists of inert ash and debris. The Municipal Solid Waste generated per capita per day is 0.476 kg. Expenditure per month is 38.02 lakhs out of which AMC contributed 80 per cent and public contribution consisted 20 per cent (SWM Cell Aizawl:2016). In a month, 1554 trips of Medium Motor Vehicle (MMV), 807 trips of Light Motor Vehicle (LMV) carry waste to the site.

The AMC and SIPMIU which is an Asian Development Bank (ADB) assisted project under North Eastern Region Capital Cities Development Programme (NERCCDIP) on urban services such as Water Supply, Solid Waste Management and Sewerage; have started a pilot project experimenting segregation of waste into wet and dry bin at the household level. The project was enforced to comply with the Municipal Solid Waste Rules, 2000. Five local councils were selected such as, Laipuitlang, Nursery Veng, College Veng, Chawnpui and Kanan localities for duration of three months in the year 2014. The wet wastes were composted in a M/s Vermizo Society, Lengpui and was used for

manufacturing fertilizer; dry wastes were dumped at Tuirial Dumping ground and recyclable wastes, viz. Paper, polythene, glass, plastic bottles, etc. were sold to the customers and the remains were put in a landfill (Dorema:2016).

Out of the 60,432 families living in Aizawl, according to 2011 census, the number of households having latrine facility is 99.5, which is 60130 families out of which 2465 families having piped sewer system, 50810 families having septic tank and 1563 families with other system, 4570 families used pit latrine system. Number of households not having latrine are 0.5 percent and out of which public latrine is used by 0.2 per cent and open defecation per cent is 0.3 which makes a total of 18 households. Aizawl is still not open defecation free as per the latest census. There is no sewerage system in Aizawl, people uses septic tanks generally not comply with a design prescribed by Bureau of Indian Standards (BIS). The effluent from the septic tank flows into soak pit. There are around 40 private emptiers in the city registered under Mizoram Septic Service Association (MSSA) and 5 vacuum tankers owned by Urban Development and Poverty Alleviation (UD & PA). The private emptiers utilize blow mould tank of 2000 litres capacity to carry septage and generator motor for emptying purpose, whereas UD & PA provides quality emptying by well designed vacuum tankers of 2000 litres capacity. Private emptiers attract customers through advertisements in television and local newspapers, and their emptying fee is generally INR.4000/- per trip. On the other hand emptying fees charged by UD & PA is INR 3,100 per trip. Disposal sites are generally 10-15 kms away from the city (CSE, 2015). Legal provisions relating to solid waste and sewerage are:

1) The Environment (Protection) Act, 1986 and the Water (Prevention and Control of Pollution) Act, 1974
2) Water Cess Act, 1977

3) The Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013
4) Mizoram Municipalities Act, 2007 (amended 2009)
5) Mizoram Sanitation Rules, 1980
6) Public Health and Sanitation Regulation, 2012
7) The Aizawl Municipal Council Building Regulations, 2012

Aizawl and Cleanliness Awards

Aizawl has become one of the cleanest city in India. Swachh Survekshan – 2016, ranks 73 cities in India, which were surveyed for cleanliness and the survey results was announced by Urban Development Minister Shri M.Venkaiah Naidu on February 15th, 2016. Cities were categorised into four such as **Leaders** with a score of at least 70%, **Aspiring Leaders** – a score of 60-70%, **Acceleration required** 50-60% and **Slow Movers** – scored below 50%. Aizawl was ranked 41st and came in the category of 'Acceleration required.' Again, on July 15th, 2016, Aizawl was adjudged as the 5th Cleanest City in India by the Centre for Science and Environment, a research company in Delhi. Aizawl had won the award for practicing the best in solid waste management and for steering the different modes to tackle waste management through collection, segregation and processing.

Major Gaps in Sanitation System

Absence of Scientific Solid Waste Management System

The existing solid waste management practice is unscientific, i.e. without segregation in its collection and disposal, which is merely an open dumping on the roadside between Zemabawk and Tuirial though the main dumping centre is near Tuirial which has been used since 1997. There is no waste segregation and burning of waste is practised polluting the environment. Many

people still prefer to dump wastes in the neighbouring areas, such as in the stream and drainage. During the dry season, i.e. between October to March, wastes are piled up in these locations and monsoon storm water washed away wastes into the rivers and it has been often witnesses that many time wastes are deposited on the roads polluting the neighbouring areas. The neighbourhood had to be cleaned up.

Transportation of Solid Waste in open/partly covered vehicle

Solid Waste is being transported in open vehicles. Since the vehicles aren't covered, light weight waste may be flown off the vehicles and littered on the roads. The loading and unloading of waste is being done manually and sanitation workers involved in this activity do not use any Personal Protective Equipment (PPE) (SIPMIU Aizawl:2015).

Absence of Sewerage Treatment Facility

Sewerage system in Aizawl is unscientific. Waste water from the household is connected directly to drainage which flows down to the stream and further into the river. Urbanization and its aftermath, more and more sewerage from the houses located in the upper levels of the ridge has polluted the stream down-slope. Not only that, the traditional source of water in Mizo society is a spring and there are 165 spring sources in the Aizawl urban area. Sewerage from private and public outlet as well as septic tanks has polluted water in these water sources. According to census 2011, number of household having waste water outlet, which is connected to closed drainage is 27 per cent and which are connected to open drainage consists of 62.7 per cent. Households with no drainage system comprise 10.3 per cent. Until now there is no mechanism of wastewater collection, conveyance and treatment in Aizawl.

AMC do not have direct control over Local Council in SWM

Local Councils maintain SWM in their jurisdiction and have the final authority in collecting and managing funds and hiring vehicles for garbage disposal, etc. AMC does not have a garbage transport vehicle and an incident which took place in 2014 was that a state-wide public carrier vehicle ban was organised by transport associations. As a result, collections of solid wastes in many localities were halted as long as the ban was implemented because public carriers were also hired for garbage disposal. This reveals that SWM through the modified PPP collection system is still having room for improvement. Infrastructural development and acquisition of tools and machineries is the need of the hour.

Collection of Garbage by Local Council

Garbage collection in local council area-wise is inconvenient in many aspects. In some localities such as Chanmari, for garbage collection at lower and upper roads, a vehicle has to circle through a long distance covering five localities before arriving at the lower level road. Citizens at the lower level may dispose garbage in a vehicle hired by neighbour vehicle, i.e. Electric Veng. Therefore, locality-wise collection of garbage is somehow a hindrance for efficient and economical garbage disposal service.

Major Steps taken to remove the challenges

Although the urban local body is still in the incipient stage, performance and service rendered by AMC is invaluable. In the matter of SWM, there is a plan for scientific solid waste management to be funded under ADB – NERCCDIP (SIPMIU), with a total cost of ‘30.57 Crores which is expected to be commissioned by 2019. A new landfill will be prepared after every five years and the project will last for about 25 years. The main components are:

1) Provision of two bins to each household for implementing waste segregation at source

2) Provision for purchase of 54 nos. of specially designed vehicles, 50 nos. of 3.5 cu.m capacity and four numbers of 1.5 cu.m capacity for transporting solid waste.
3) 148 numbers of wheel burrows for collection of street waste.
4) Vermi compost plant for composting bio-degradable waste (11 MT per day)
5) Mechanical compost plant (50 MT per day)
6) Sanitary Landfill
7) Provision for closure of the existing dumping site.
8) Capacity Building, IEC, etc.

The centre may not be sufficient to scientifically cater the waste of the whole city. In order to comply with the decentralised waste treatment policy, AMC have acquired additional site for SWM in the southern part of Aizawl.

With regard to sewerage, SIPMIU has also started constructing the sewerage system for 19 localities by laying 46 km primary and secondary network for collection and conveyance of waste-water along existing roads and stretches along hillside where conveyance through gravity is possible. Sewerage Treatment Plant is being constructed at Chite and the first phase of the project is expected to complete by 2019. Dried sludge will be used for agricultural purposes and treated water will be discharged into Chite river. (SIPMIU Aizawl:2016)

Conclusion

Report of the Sub-Group of Chief Ministers – 2015 during their visit to Aizawl and its adjoining villages have reported that Mizoram is a relatively cleaner State, compared to other parts of the country due to the combined efforts of the Government, NGOs and general public (Sub-Group of CM: 2015). The reason for visiting Mizoram state was because of its highest coverage of sanitation in the country. Here, the role played by NGOs such

as the Young Mizo Association (YMA) is worthwhile. It is often said that 'Cleanliness is next to Godliness'. The slogan doesn't appear in the Bible, Mahatma Gandhi has also spoke of this maxim. The origin of the phrase was from the age of Babylon and Hebrew and appears in the writing of Sir Francis Bacon, an English philosopher. In 1791, John Wesley also spoke of these lines, 'Don't forget to wash your ears - Cleanliness is next to Godliness' this phrase was first recorded in his sermon which says that being clean is a sign of spiritual purity or goodness (Sawma:2016). The first missionaries from England had arrived in Mizoram in 1894. They imparted western education and cleanliness was a part of the school curriculum and the church teachings as well. Before the advent of the British, among the Mizo society, personal hygiene and cleanliness was not held as a priority. Open defecation was practised and they were found to be unhygienic. Aizawl is very fast gearing towards achieving a clean city under Swachh Bharat Mission (Urban). The Cleanliness campaign has been conducted for almost 40 years since it was first introduced in Aizawl. It may be right to say that cleanliness and personal hygiene have been imparted among the Mizos ever since the advent of the missionaries.

At present, two types of collection bin – one for bio-degradable and the other for non-bio-degradable have been distributed to every household and the result of the pilot project at five localities shows that people were unaware and reluctant to segregate the waste. These will likely the hindrances in solid waste disposal management. Besides, in the existing SWM system, deploying of vehicles for waste disposal is the local council's jurisdiction, and decentralization creates a wide gap between AMC and local council. The former's hand is somehow tied up to effectively control the subsidiary body. With regard to sewerage, usually, kitchen liquid waste is connected to a drainage which

flows down the stream and toilet water seeps into the ground or into the stream/drainage polluting the ground water as well as spring water source down-slope. In order to have a successful implementation of cleanliness and sanitation management, untiring and enthusiastic participation of the local community is a sine qua none and, at the same time, unrelenting participation of civic authorities by imparting the knowledge and public awareness will bring the overall good urban governance.

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