



Fire Accident in Kolkata Slums: A Case Study of Basanti Colony and Tangra Slum-Causes, Consequences and Possible Ways to Mitigation

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Abstract

Present study deals with the fire accident in slum areas of Kolkata concerned mainly with two major slums namely Basanti Colony slum in Ultadanga and Tangra Slum. The study was overtaken to analyze the fire accidents in these above mentioned slums. For this purpose 50 samples were taken from these two slums by using simple random sampling by the means of questionnaire and personal interviews of slum dwellers. The data obtained from these analyzed and represented by various statistical techniques. The study revealed the causes of fire accident and its possible consequences. Here not only the causes of fire accident are discussed but also try to recommend the possible measures of mitigation.

Keywords: Slum, Kolkata, Basanti Colony, Tangra, Fire accident

Introduction: In nineteenth century with the growth of trade and commerce in Calcutta rural poor from rural districts of Bengal and suburbs was attracted. Since the communication system did not allow them to commute daily they had to live in the city itself in unsanitary and sub-human conditions which gave birth to the so called Calcutta slums. Part of the Slums consisted of the areas where the British Population's servants lived with not even minimum facilities. The slums of Kolkata can be divided into groups, the older slums located in the heart of the city, some as

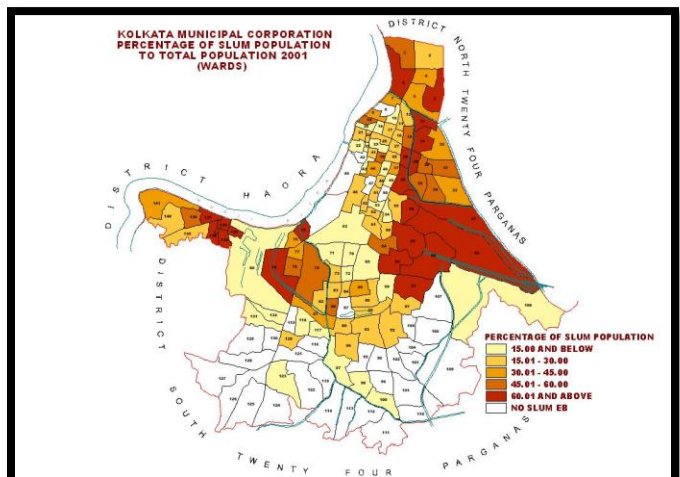


Figure- 1: Slum Population Map of Kolkata

old as 150 years, and the more recent slums mostly located in the outskirts of the city. Few slums exist on the western, eastern and north-eastern side of the bypass which are located on raised land that was previously low-lying wetlands (Bheri Region).

Slums of Kolkata are considered the most vulnerable areas in the city where fire frequently breaks out. Every year, slum fires are reported in the city, rendering hundreds homeless. “The shanties are constructed with bamboos, plastic, wood, old worn out bed sheets and bed covers, all of which are highly combustible substances. On top of that the residents cook their meals in their shanties and most of them store kerosene. Illegal hooking from electric posts is also rampant in these slums. All these add to their vulnerability to catch fires. The state Government fire and emergency services department had decided to involve slum dwellers to arrange a workshop to train them in fire fighting and to spread awareness. But it is difficult to educate the slum dwellers on preventing fire as their economic condition forces them to use combustible materials to build their shanties. Some major fire accidents in the slums of Kolkata are listed below:

Table-1: Some major Fire Accident in Kolkata Slums

Place	Date	Time	Incident	Major Cause	Injured	Casualty
Brace Bridge Railway Station	13 th January, 2016	15:30 Hours	The fire at Indira Pally slum located on railway land beside the third line at Brace bridge Railway Station gutted 100 shanties.	Short circuit	5	-
Dumdu m Park	26 th December ,2015	20:41 Hours	A devastating fire broke out at a slum area in Dum Dum Park's Harichand Palli on Saturday night. Nearly 80 shanties were gutted in the fire. A 70-year-old slum dweller was killed	Burst of Gas cylinders	1	1
Park Circus Railway Station	7 th April, 2014	22:00 Hours	More than 300 houses got burnt in a fire accident near Park Circus Railway station	-	10	1
Tiljala, Topsia	23 rd January, 2014	08:00 Hours	A slum near 45 no. tiljala in Topsia caught fire this morning	Short circuit	2	-
Kalikapur	22 nd January, 2012	22:10 Hours	100 shanties were gutted in a major fire at Kalikapur in the eastern part Kolkata	Burst of Gas cylinders	5	1

E.M.By pass	5 th march, 2010	11:30 Hours	A huge fire broke out in slum on the Eastern Metropolitan Bypass near Science city Auditorium.	Short circuit	1	-
Basanti Colony	12 th January, 2010	12:30 Hours	A dangerous fire accident engulfed one life and rendered around 2500 dwellers homeless.	Burst of Gas cylinders	15	1
Tangra	27 th May, 2008	05:50 Hours	Two girls were killed after a fire broke out in the Tangra. Two others were sustained burn injuries are being treated.	Fire in Leather industry	2	2
Tangra	19 th March, 2008	12:55 Hours	A fire broke out at a leather factory, where huge quantities of plastic and inflammable materials were stocked in Tangra.	Fire in Leather industry	1	-

Objective:

The major objectives of this study are-

1. To analyze the fire accidents in various slum areas of Kolkata.
2. To examine the causes and consequences of fire accidents in slum areas of Kolkata with special reference to Basanti Colony and Tangra Slum.
3. To formulate mitigation strategies to ignore fire accidents in Kolkata slums in future.

Study Area: Kolkata is located in the eastern part of India at 22° 28 N to 22° 58 N and 88° 10 to E 88° 27 E. spread roughly north south along the east bank of the Hooghly River. Kolkata sits within the lower Ganges Delta of eastern India. Much of the city was originally a wetland that was reclaimed over the decades to accommodate a mushrooming population. Kolkata has a total population of 4,486,679 persons, of which 2,362,662 are males and 2,124,017 are females. Among the total population, 1,457,273 are slum inhabitants which accounts for 32.48% of total population (Census of India 2011).

Tangra Slum is located in Ward No.58 .The area lies in 22° 33' 0" N latitude 88° 23' 0" E longitude and fallen in the UTM grid of 45Q 642242 2494365. The area is surrounded by Debendra Chandra Dey Road in the North, Topsia road in South and Chingrighata Road and Maheswaritala Road in the west and eastern side respectively. Tangra Slum is a Special type of authorized slum

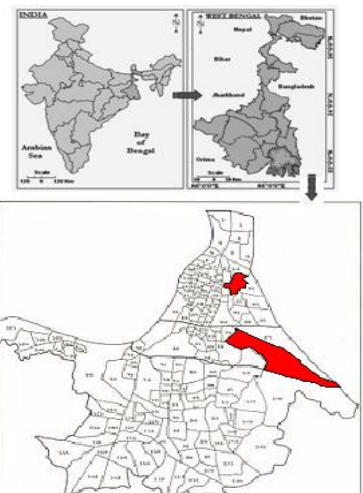


Figure-2: Location map of the Study area

in east Kolkata that traditionally housed a large number of tanneries owned by mainly people of Chinese origin. Most of the standing structures have been built, over many years, by the industrious Chinese, upon marshy and reclaimed low lying land. Over the past several decades, it has served as the location of Calcutta's Chinatown. This is not a coincidence; the Chinese of Calcutta have gradually turned this part of the Kolkata into an important destination for sourcing finished and semi-finished leather. The Chinese specialized in the manufacture of leather and turned it into one of the major industries of West Bengal, providing employment to tens of thousands of local inhabitants. In addition to the huge volume of exports to the developing and developed countries, finished leather is supplied to the major shoe and leather goods manufacturers all over the country. Many made-to-order shoe shops in Kolkata are also run by entrepreneurs from this community. Food from Tangra is a distinct variety of traditional Hakka Chinese cuisine adapted to Indian ingredients and the Bengali palate. This has spread to the rest of India, along with the recipes earlier unique to Tangra. Tangra is now the most popular destination for Chinese food. Kolkata Chinatown is changing rapidly. The population is no longer renewed by waves of migration and many traditional professions such as dentistry,

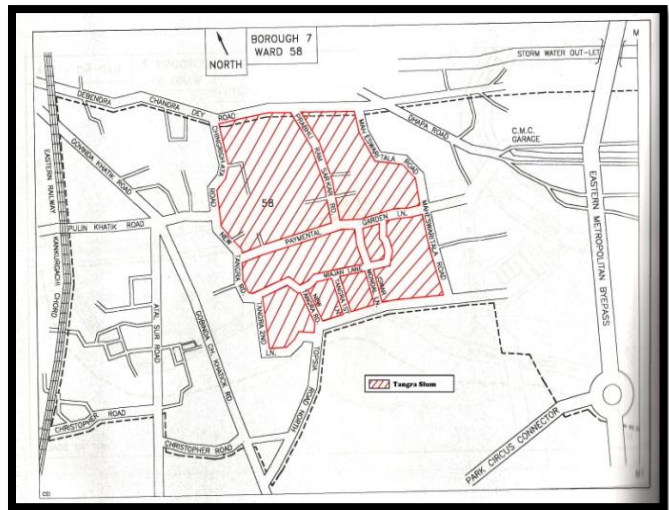


Figure -3: Location Map of Tangra Slum

laundry and tannery are no longer the preserve of the Chinese. The West Bengal government, under direction from the Supreme Court, recently moved all tanneries to Bantala, a suburb in the east of Kolkata.

Basanti Colony is located in Ward No.32. The area lies in $22^{\circ} 35' 40''$ N latitude, $88^{\circ} 23' 32''$ E longitude. The area is surrounded by canal circular road in the north, ultadanga main road in the south and Bidhannagar Railway station (platform no. 4) and Bidhannagar station road in western and eastern side respectively. Basanti Colony is also a

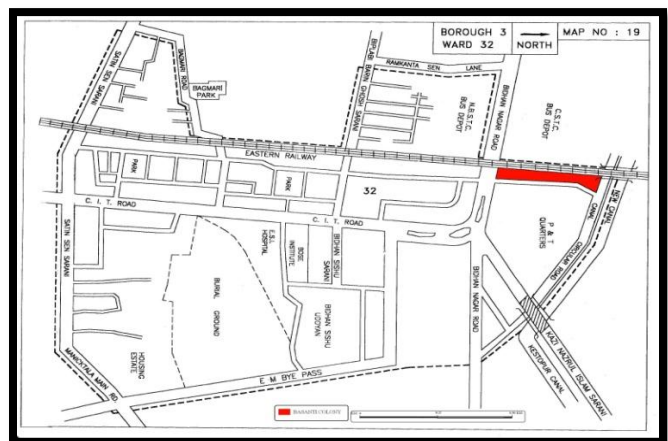


Figure -4: Location Map of Basanti Colony

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special type of unauthorized slum which is developed along roadside, canal side & Railway line side also by the poor people displaced from their place due to political instability, unemployment and excessive increase in family size. As a result of the industrial growth and rapid urbanization of Kolkata during 1930-1940, workers from south 24 Parganas, North 24 Parganas and from present day Bangladesh poured into this city in search of employment and income. The thirties and forties witnessed a significant enhancement of the industrial base in and around Kolkata to support British war effort. This led to the migration of cheap labor from this place. This led to the migration of cheap labor from the hinterland. These people found cheap accommodation, mostly in huts made of mud and bamboo. The production of huts without basic infrastructure facilities eventually led to the growth of Basanti Colony. This growth Continued and the vacant areas were rapidly filled up.

Methodology: In order to fulfill the objective necessary methods and techniques has adopted to procure the necessary data. Most of the information in this study has been collected through primary survey and extensive field survey. The methodology of the present work may be categorize in three stages-

A. Pre-Field Method: Collection of necessary secondary information and data from archives of various newspaper reports, Kolkata Municipal Corporation, Borough offices and 14 and 58 no. ward offices.

B. Field Method: Primary data have been collected through field survey and discussion with local people with the help of questionnaire schedule and through detailed observation.

C. Post Field Method: Data collected from the field is analyzed and computed in the form of tables. Then it is interpreted by different types of diagrams with the help of different statistical techniques

Fire accidents in Basanti Colony and Tangra Slum: This is a well known & dangerous Socio-economic Hazard in Slums massively occurred in Basanti Colony & Tangra Slum:

A case study of Basanti Colony (12th January, 2010): A dangerous fire accident engulfed one life and rendered around 2,500 dwellers homeless on 12 Jan, 2010 Tuesday afternoon as it reduced a slum to rubble and severely damaged a market in Ultadanga.

Twenty-six fire tenders were called in to battle the blaze for two hours as the entire slum area in Number 4 Basanti Colony — adjacent to platform number four of Bidhan Nagar Road station — comprising



Figure 5: Fire accident in Basanti Colony (12th Jan, 2010)

over 500 shanties. The flames, leaping up to 35 feet, were checked just before they spread to the P&T Colony and the Reserve Bank of India quarters nearby.

Shyamal Sardar, a 25-year-old van rickshaw-puller, died in the blaze that was probably sparked by a short-circuit and then fuelled by the katatel and country liquor hubs in the Ultadanga slum. The BC Roy Hawkers' Corner Market next to the slum was also gutted. According to residents, the fire broke out around 12.30pm and spread rapidly to engulf the entire colony, spread over an area of 1,500mx500m. "Shob chhai hoye gyallo. (Everything has turned to ashes)," mumbled Malati Nashkar, a vegetable vendor, whose home was reduced to a heap of debris in less than an hour. "I don't know what to do. We (her family of five) are alive, but where do we live now in these cold winter nights?" she asked, sitting on the pavement with her five-year-old son Babai.



Figure 6: Fire accident in Basanti Colony (12th Jan, 2010)

There will be a forensic study. One person was killed and around 15 persons, including nine fire services department personnel, were injured.... The flames spread faster because several LPG cylinders exploded."

Gopal Bhattacharjee, the director of fire and emergency services, added: "The place was being used to store and sell katatel and country liquor. The highly inflammable articles fuelled the fire."

A case study of Tangra slum (19th March, 2008)

A fire broke out at a leather factory, where huge quantities of plastic and inflammable materials were stocked, in east Kolkata this morning.

At least 20 fire tenders were battling the blaze at the leather factory at Radhanath Chowdhury Road in Tangra, which was spreading rapidly because of the inflammable substances, fire brigade sources said.

"We are trying to contain the fire so that it doesn't spread to factories and houses nearby. There is also scarcity of water and we have to depend only on our own supplies," said a fire officer. "The main problem with these factories is that they don't have any firefighting facilities," he said. There was no casualty. This was the ninth fire incident since January at Tangra, a congested area housing numerous leather factories.



Figure -7: Fire accident in Tangra Slum (18th Mar, 2008)

A case study of Tangra slum (27th May, 2008): A five-year-old and a teenage girl were killed after a fire broke out in their Tangra home on Monday afternoon. Two others, including a two-year-old, sustained burn injuries and are being treated at N R S Medical College and Hospital. The fire spread fast because spurious fuel was stored in the room.

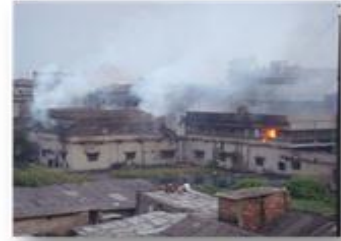


Figure 8: Fire accident in Tangra Slum (27th May, 2008)

The fire broke out at Deepak Khatik's house at 69, D C Dey Road — situated in a slum — around 12.50 p m. Deepak, an auto-rickshaw driver, was not home then. His wife Lakshmi and three children — Amit (5), Nayna (9) and Sagar (2) — were inside with two of their neighbours. Lakshmi managed to flee with Sagar but Amit was trapped inside with neighbours Noorjahan Biwi and Pinki Khatun.

Local residents rushed to the spot and managed to control the flames by pouring water. The fire brigade sent two fire engines and doused the blaze. But by then, Amit and Pinki were burnt alive while Noorjahan sustained 65% burns in the lower portion of her body and had to be hospitalized.

A probe revealed that the fire had broken out from a kerosene stove. Lakshmi told police that Noorjahan had come to her room with Pinki around 12.40 pm. Both live nearby. Noorjahan's husband, Israfil Islam alias Laden, is also an auto driver. The duo sold spurious fuel for autos and a barrel of oil was stored inside Deepak's room. "Laden was waiting in his auto on the road and his wife and Pinki came to our room to take the fuel. I was cooking on my kerosene stove and Sagar was playing near the door. Amit was on the bed," said Lakshmi. "While Noorjahan was pouring fuel from a barrel, Pinki was playing with Amit on the bed. Suddenly, a spark of fire from the stove fell into the oil barrel," said Lakshmi.

Causes: The possible reason for fire accident in these two slums and other slums of Kolkata are analyzed described below-

1. **Materials used in Building houses:**
2. **Short Circuit due to illegal hooking**
3. **Storage of Gas cylinders illegally**
4. **Illegal industries(leather, garments, Chemical)**
5. **Storage of illegal country liquor**
6. **Overlooking the guidelines specified by Fire & Emergency dept.**



Figure-9

Materials used in Building houses: Most of the slums of Kolkata are illegally developed along Railway, canal side or by the road side. In Basanti Colony slum dwellers have illegally occupied by the Railway side area & they do not pay any rent to the KMC & railway. A large no. of houses occupied by early settlers has been rented to the new comers. The rent obtained forms the major source of their income. Majority of the slum dwellers claim to be the owner of the houses ignoring the fact they are illegal occupants of the land. In Tangra a large number of tanneries and Chinese occupied these eastern fringe of Kolkata and resided there for a long time around >70 years.

Most of the slums of Kolkata are made by various flammable materials like bamboo, carpet, tarpaulin etc. which is one of the major reasons of fire accidents in slums. In 12th January, 2010 when a fire gutted Basanti Colony many officers of fire & Emergency services reported that as Basanti colony was developed by various flammable materials illegally control of fire is too tough. About 90% of the houses, walls are made by bamboo fencing. Floor are made by cement and most of the roofs are off thatched in nature. The distance between the two houses is very short near about less than 0.5metre.

On the other hand, a different type of house pattern has been prevailed in Tangra. Roof is off cemented or asbestos type, wall is made by brick cement and floor is cemented.

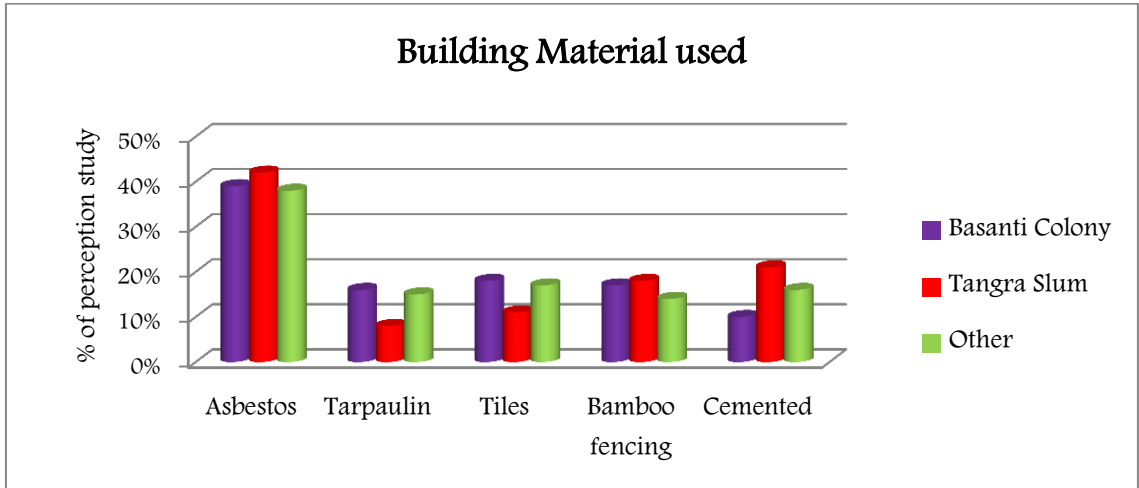


Figure-10

Storage of Gas cylinders illegally: Most of the slum dwellers of Kolkata do not afford LPG as a fuel. Mostly they used Kerosene, coal or firewood. But the surprising fact in various slums that though they don't have LPG connection, they used LPG illegally from various blacker. Even they used Electric Heater as a fuel because they are used to frequent hooking so using electric heater is a common practice in Basanti Colony, Tangra Slum and other slums of Kolkata.

In Basanti Colony, 39% families are using kerosene, 27% families are using LPG and the remaining 34% used Electric heater, firewood, katatel etc. On the other hand in Tangra Slum, 70% families are using LPG, 12% families are using Kerosene, 8% families are using coal 8% families are using Firewood & 2% families are using cow dung cake. An important cause of frequent fire accident in these slums is illegal storage of gas cylinders and bursting of these gas cylinders. During field survey it is observed that many slum dwellers in these slums were attached with illegal LPG gas cylinder marketing business, for this they store many gas cylinders in a place from which many fire accidents taken place. In 26th December, 2015 fire accident in Dumdum Park, 22nd January, 2012 in Kalikapur and off course 12th January and 2010 fire accident in Basanti Colony caused mainly due to illegal storage of gas cylinders and burst of cylinders.

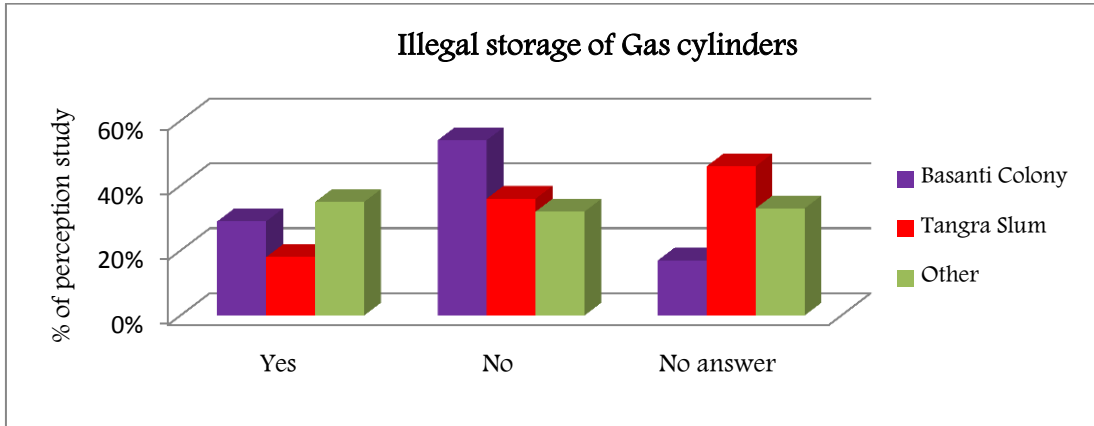


Figure-11

Short Circuit due to illegal hooking: Electricity is one of the basic needs of everyday life. Presently most of the slum people have an access to electricity and other have a rented beside this some families are not able to get electricity as they are very poor and cannot pay for electricity. But in slums of Kolkata the scenario is different. From field survey it is observed that some dwellers have their own electric meter and the remaining part used electricity by hooking violating state electricity and CESC laws. Many fire accidents like 13th January, 2016 in brace bridge railway station, 23rd January, 2014 in etc. occurred due to short circuit. From which it is clear that to stop fire accidents in slums of Kolkata at first illegal hooking should be stopped at first.

Illegal industries (leather, garments, Chemical): In various slums of Kolkata it is observed during field survey that many illegal industries established here and there ignoring fire & emergency service license, WBPCB regulation and violating KMC rules. Especially in Tangra the illegal leather industries developed here and there. Though in 2000 West Bengal Government shifted them to Calcutta Leather Complex, Bantala. But overlooking this circular they run their illegal leather business in Tangra. Many firemen reported that illegal running of leather industries is the chief cause of fire accident in Tangra slum especially in fire accidents of 27th May & 19th march, 2008.

Storage of illegal country liquor: Many slums of Kolkata reported a huge storage of illegal countries liquor which is also responsible for the fire accidents in Kolkata. In the study area it is also observed. Many people store a huge amount of countries liquor which is a big reason of fire accidents in Basanti Colony and Tangra Slum.

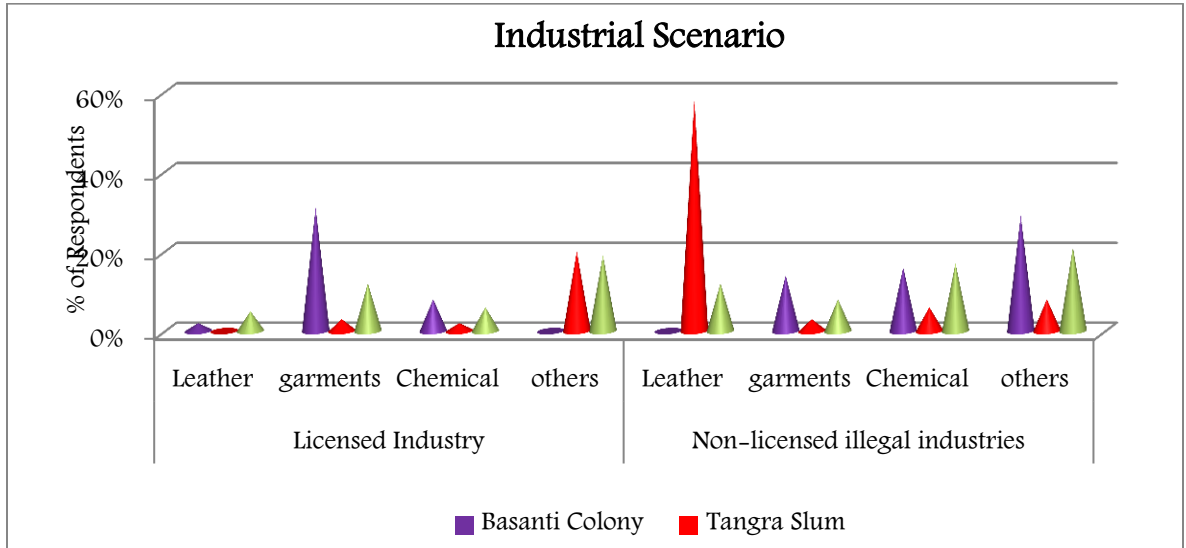


Figure-12

Overlooking the guidelines specified by Fire & Emergency dept.

West Bengal fire & emergency services announced guidelines to check fire accidents. Violating these guidelines slums of Kolkata store gas cylinders illegally, use flammable goods in building houses, use electricity by hooking, violating national building code etc. As a result, these slums turned into ashes and some innocent people lost their lives.

Suggestion and Recommendations:

1. Use non-combustible type building material to build your houses.
2. Sufficient space around the perimeter of the building for easy access and maneuverability of Fire Service Vehicles shall be maintained.
3. Don't store LPG cylinders in basement or dwelling house.
4. Don't hook from electric post.
5. There should be at least 2m gap between two houses.
6. Don't practice illegal leather or other industries violating guidelines of WBPCB, West Bengal Fire and emergency service etc.
7. Inform Fire Brigade either 101 or specific telephone No. of local Fire Station and be assumed that the information received by the Fire Brigade by the local Fire Brigade for Kolkata and Suburbs.
8. Keep ready the fire extinguishing arrangement in the slum.
9. Keep ready atleast one ambulance in every slum
10. Keep fire away from tarpaulin or other flammable goods.
11. Banned of storage of illegal country's liquor.
12. Make solar slum by installing solar domes.
13. Make focus on construction of Pacca houses for slum dwellers under various West Bengal housing scheme.

Conclusions: From the above analysis, it is clear that fire accident in slums of Kolkata has become a regular incident. Though various programmes were taken by WBPCB, West Bengal Fire and emergency services, Government of West Bengal, but still slum dwellers practices various illegal activities like storage of Gas cylinders, illegal business of country liquor, hooking etc. Government of West Bengal installed 800 solar domes in Tangra, topsia slum to make Country's 2nd and state's 1st solar slum in Tangra. If state Government make housing scheme for slum dwellers like 'Gitanjali' and 'Amar thikana' fire accidents can be ignored. CESC and state electricity board should also take necessary steps to stop illegal hooking in slums. Now West Bengal Fire & Emergency department also distribute leaflets and advertising to conscious slum dwellers about their guidelines. If these steps might be taken then we can save thousands of innocent people from this disaster. Above all people's participation, education and awareness must be needed in every aspect.

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