



livelihoods

today and tomorrow

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Special
Supplement

Firework Industry

India is the second highest producer of fireworks in the world after China. But surprisingly all of its products are consumed domestically only. Firecrackers bring in an adrenaline rush and excitement amongst the youngsters and are used as a way for celebrating many occasions the world over, but India has one festival, which acts as a boon for the firecracker industry- Diwali, the festival of lights and sweets, and which nowadays is a festival of firecrackers, noise and air pollution! It is not uncommon to find most of the cities in India in a smog the day after Diwali, the air pollution levels rising to hazardous levels, some people facing breathing difficulties and streets piled by the remnants of 'phooljhadis', 'burnt ladis', 'atom bombs', 'flower pots', etc.



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India celebrates every occasion with fervour and money; be it New Year, weddings, festivals or sport victories, apart from food, fun, rangolis and poojas, celebrations are marked by cracker revelry. But absolutely nothing can be compared to the fireworks extravaganza of Diwali, which is the time, when the firecrackers fever reaches its peak. A testimony to this is the fact that almost all of the firecracker products manufactured by the Indian firecracker industries are burst on the day of Diwali every year. To keep up with the demand, firecracker units all over India run overtime towards coming up with as many firecrackers as possible for the D-Day (Diwali Day). For stocking up on crackers for Diwali, some of the companies work for most of the year, except for a three-four month break; thereby, providing livelihoods almost throughout the year. While some units start working just a few months before Diwali, providing supplementary livelihoods to people in the poorest of poor areas across India, where the weather conditions are hot, dry and agriculture is therefore almost unviable. Additionally, a large chunk of the industry's labour force makes up of women; a vulnerable group. The industry is worth more than 6000 crore and is growing at a rate of 10% per year. Considering these facts, why has the industry got itself a notorious name, isn't it doing a good thing providing jobs to so many people? Well, yes! But at the cost of its labourers literally playing with fire and their lives. The art of firecracker making is a risky business, one wrong mix of chemical, one electric spark and everything will burn down to ashes. Accidents are frequent and the loss of life and disability a very harsh reality.

Safety regulations: Keeping this in view, the government has put in place the Petroleum and Explosives Safety Organisation (PESO) which has been given the statutory power to lookout for the explosives safety. PESO comes under the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry. The Explosives Act, 1884 and Explosives Rules of 2008 have set down the type of firecrackers that can be manufactured and the materials to be used and their quantity and has classified them into different grades. Some safety norms have been put forth that must be adhered to while manufacturing, storing and selling such as not having flammable or sparking material close by, keeping water/fire extinguishers near, and having adequate escape doors. A unit manufacturing between 15kgs to 500kgs of firecrackers or gunpowder, licence must be obtained from the Controller of Explosives, and if the units produces more than 500kgs, licence must be obtained from the Chief Controller of Explosives. Frequent inspections are carried out to see whether the rules are being followed and if not the licenses are cancelled. However, implementation of rules is a mighty task as we are talking hundreds of licensed units and unlicensed, illegal units run in homes.

History of firecrackers in India: For a long time now, fireworks or pyrotechnics have been a fascination among us for their almost magical sparkle and are a sure-shot way of ushering in a celebratory mood the world over. But it wasn't always so! Diwali wasn't always associated with crackers. Fireworks made an impact in India in the last 100 years or so. It was the Chinese who first invented the use of firecrackers for entertainment purposes more than 500 years back and began developing a wide range of products and then started exporting it to other countries. However, the use of firecrackers even in medieval India for display could be seen in some old paintings, but it was extremely rare. It was in late 19th century and early 20th century that firecrackers making started gaining momentum as Diwali started transforming itself to a festival of crackers. Bengal was the place, where innovative firecrackers started being made using gun powder and iron borings. Later, the range and variety of firecrackers began increasing with the introduction of chemicals like potassium chlorate, barium and strontium nitrate, aluminium and magnesium powder, chlorates, nitrates, and metal powders.

Sivakasi's journey to becoming a hub: In the 1920s, two people from Sivakasi, Virudhunagar district came to Kolkatta, because their hometown was facing continuous drought, famine, and agriculture had become unviable and livelihoods were scarce. Here, they learnt firecrackers and matchsticks making and went back to Sivakasi and started their firecrackers factories; little did they know that they were going to start an industry that would become synonymous with their hometown. As Sivakasi was dry and hot, conditions optimal for firecracker making, the business caught the attention of the whole town, and started becoming a major livelihood provider. Firecrackers started becoming really popular and more and more people began manufacturing to keep up with the demand. What started as a small amusing attraction during Diwali soon grew into a rage; with people looking at bursting crackers to show off their status symbol. It was good and sundry earlier when people gave a thought before spending on luxuries like crackers. However, with the spending capacity of Indians rising, and people not afraid to spend a small sum on buying crackers, the pollution levels are ringing alarm bells. Sivakasi, which had just 3 firecrackers factories in 1942, now has around 800 licensed large to small factories hiring more than a few lakhs of labour directly and a few more lakhs indirectly in cardboard, pipe, wire, raw materials, chemicals, printing factories, wholesale and retail shops that depend on firecrackers industry for their sales. Additionally, firecracker making has transformed into a cottage industry; many smaller firecrackers units are being run from home by families or by individuals hiring labour. Sivakasi is producing more than 85% of the firecrackers consumed in the country, and is the second largest firecracker production hub after Liuyang in China.



Apart from Sivakasi, firecracker industries have cropped up all over India to cater to the unquenchable demand for firecrackers. The firecrackers are being produced in Sattur district of Tamil Nadu; villages surrounding Agra, Jhansi, Lucknow, Kanpur, Etawah, Varansi, Ghaziabad of Uttar Pradesh; Jaipur, Bikaner, Udaipur of Rajasthan; Bhopal, Indore, Gwalior, Raipur of Madhya Pradesh; Rohtak, Bhiwani of Haryana; Howrah, 24 Pargans of West Bengal; and states of Kerala, Maharashtra, Gujarat, Andhra Pradesh, Karnataka. Though to a small extent the firecracker units are licensed, most of them are illegal, unlicensed, or makeshift units which crop up during the season and pose a whole other problem for the authorities.

Conditions of workers: The firecracker industry labour literally play with fire and their lives to bring us our "ladis", "snake tablets" etc. Most of them must have seen a fire accident from up and close, and are still willing to work in this industry speaks volumes for the level of desperation they are in for earning a livelihood. The firecracker factories operate in a distinct way. The units have open spaces with little cubicles, with multiple doors for safety,

spread throughout its campus. Each cubicle is filled chemicals, pipes, cardboard boxes and workers, and this is where the chemicals are mixed and filled inside pots and boxes.

Lack of safety measures: It has been often reported that though the cubicles are meant for around four or five people, during the Diwali season more people are crammed into the cubicles by managements to produce more crackers, increasing the chance of accidents. The wages are between Rs. 150/- to Rs. 200/- per day and are paid on a weekly basis. The workers are generally unskilled and are from the poorest localities looking to earn and who are not aware about the danger posed by the wrong mixing of a chemical. Chemical reactions and explosions can even happen because of humidity levels, improper handling, or electric sparks, but this is not explained to the workers. Government has put in a rule that open wiring or electric wiring should not be present in these areas and that fire extinguishers need to put up nearby, but the implementation has been patchy even in licensed factories. Women make up a sizeable workforce. Skill trainings are absent, people are supposed to learn on the job. The workers do not wear any safety gear, such as masks and gloves and are in constant contact with the chemicals and inhale them. The consequential health problems include breathing problems, skin diseases, lung infections including tuberculosis (TB), lowered immunity, etc. Burn injuries are very common. It is said that the workers are covered in chemicals from top to bottom from working for long hours with them. These days there is said to be labour shortage in the factories, due to better pay and quality of work life in other industries.

Unlicensed or illegal firecracker units: A huge problem of this industry is the presence of unlicensed, and illegal units being run without giving a heed to any safety precautions whatsoever. The workers who start working in licensed factories learn how to make crackers, and then quit the work and start their very own unit by hiring some labour and turning their homes into mini factories. They run these units a few months before Diwali and afterwards close it down until the next season. People, especially women, supplement their income by working here. As they do not follow safety practices and hire a lot of child labour, when accidents do happen, which is very frequently, they tend to snuff out many young lives and burn out adjacent houses and buildings. Officials find it tough to trace these illegal units due to the cover of individual homes.

Child labour: One of the most controversial tags the firecracker industry has been tarnished with has been the hiring of large number of child labourers, that too in an industry as dangerous as firecracker making; which is quite shameful. Factory owners find hiring children cheaper compared to adult workers and also find them nimble in doing their work. The employment of children was as high as 30% of the total workforce in 1980s, and comprised mostly of girls. After the introduction of the Child Labour Act, 1986, the number of child labour has come down in licensed units, but it has not stopped. Coming to the child labour situation in small units, the number is still pretty high. Children exposed to the harmful chemicals have less immunity, and suffer from eye, lung, gastric and skin problems and stunted growth. Some children work after coming back from school into the wee hours of the night. According to an estimate, an astounding 50,000 children work in firecracker units in India. The officials are continuously conducting raids on the slightest of suspicion and have rescued many children from these places.

Accidents: As has been mentioned multiple times, casualties of those working, under this industry is very common and even eerily casual. According to PESO, 25 workers die every year in fire accidents, most of them in Sivakasi alone. According to another estimate, around 84 accidents have happened between 2006-12, killing 185 people and injuring countless others; often life-changingly! In accident



preparedness, illegal units are performing abysmally, but licensed big factories are not doing a decent job either. There are many reasons attributed for these accidents including risky testing of new chemical mixes and crackers without proper thought by big companies due to stiff competition from other companies; hiring of temporary workers; and crossing the permissible limits in both storing of firecrackers and hiring of extra workers. Accidents are also happening in wholesale and retail firecracker shops due to non-adherence of even basic safety precautions. If and when this happens in a busy shopping district lined with similar cracker shops all around, imagine the catastrophe!

Threat to their livelihoods:

Public image: Firecrackers companies make a hue and cry about facing losses due to various issues, but are not willing to spend a little amount in improving the security standards in their factories and making their labour force feel empowered. Yes they are building schools and colleges for their kids and are providing crèche services to their children. But why isn't this making news! Clearly it isn't enough! The issue of such dreadful conditions of the workers is not helping firecracker industry get a good name and is discouraging people from buying crackers. Moreover, every time one talks about crackers, the topic of the child labour that must have made them crops up. This is a very bad image that could ultimately lead to less sales.

Environmental issues: Not that bursting more crackers than we already are is going to help anyone much! One in four premature deaths in India is due to pollution. On the day after Diwali in New Delhi in 2016, the Particulate Matter or PM 10 and 2.5 levels (the deadly pollutants which are so small that when we breathe they get embedded in our lungs and lead to various diseases like cancer) whose limits were safe when they are 100 and 60 respectively touched 999 or hazardous levels; forcing authorities to wake up and take notice. Thus, this year Supreme Court banned the sale of firecrackers in the National Capital Region (NCR) until November. NCR is a big consumer of crackers and the wholesalers who took the crackers on credit from firecracker companies returned them and those wholesalers who paid for them already are facing losses worth crores. According to estimates, around 1000 crore rupees worth of losses will be borne by the industry.

Financials troubles: This is on top of Demonetisation and GST woes that are plaguing the industry. It had already been a tough year for the industry with workers not getting weekly wages for a couple of months at the start of the year due to demonetisation. The government has put firecrackers in the slab of 28% which meant prices of crackers went up and sales went down. According to newspaper reports, around 100 units are making heavy losses after these moves and 40 more closed down.

Smuggled crackers: The Chinese crackers are eating into the firecracker market India. They are cheaper compared to the Indian products and are more colourful. Reportedly, the Chinese crackers contain potassium chlorate, a material banned by Indian government due to its volatile nature, and which is cheaper than the chemicals that Indian firecracker makers use. The import of firecrackers has been banned since a while now but they are being smuggled through illegal routes. There is a need to catch these smuggled goods as they are denting our industry. Moreover, to compete with them, our companies trying out risky mixtures that may lead to accidents to make their products more appealing to customers.

Solutions: Every country needs industrial development for providing jobs to people and boosting the economy. The manufacturing of firecrackers, being a delicate job needs a lot of manual work; thus, it is very labour intensive and is providing livelihoods to close to a million people from various parts of India; a fact which cannot be ignored! India is among the most polluted countries in the world and pollution is a posing huge threat to the health of our country; but so is malnutrition and acute poverty! It is indeed a good thing that officials are taking notice. But if we ban the sale of crackers one fine day, the loss of livelihoods of so many people will mean the destitution of lakhs of families.

Rather, a more slow and phased manner needs to be applied. Being able to provide alternate livelihoods for the labour employed in firecracker industries is of critical importance.

Coming to industries' point of view, if they want to continue growing, they need to apply different strategies and look for different avenues. Though our country produces the second highest number of firecrackers, why is it not exporting its products; unlike China, which is making so much money by exporting. Maybe, government should help in raising the standards of our firecrackers to export quality and set up proper storage facilities. Moreover, if possible, maybe we can make our crackers as eco-friendly as possible; the PESO's Fireworks Research & Development Centre is trying to do just that! But companies too need to become conscious. Lastly, what is a little disturbing is the fact that the risk and danger associated in firecracker making work is not being given due importance by those running these units. Companies need to give themselves a good shake and create a positive image among people by providing their labourers with all the safety measures they can. Government needs to increase the number of supervising officials, so that more and more surprise checks can be carried out. ❖