**Issue Brief: Accidents Due To Potholes**

The statistics from the Road Accidents in India 2022 report by the Ministry of Road Transport and Highway indicate that 1,856 people have lost their lives due to road accidents caused by potholes which is a 25% increase when compared with 2021. The increase in road accidents due to potholes is alarming and highlights the critical need for improvements in road safety in India.  
  
On 17th October 2022 a 50-year-old Bengaluru resident sustained severe injuries while her daughter escaped with a minor one, when a KSRTC bus rammed their scooter from behind. The women were riding on a scooter near Sujatha talkies, the daughter was trying to avoid a pothole when the KSRTC bus rammed their scooter from behind. The 50-year-old resident succumbed to her injuries on the night of 17th October. Bengaluru is among top 3 cities for most deaths due to road accidents as per the Road Accidents in India 2022 report.

**Why are roads in India prone to potholes?**

A Bengaluru based urban transport expert says that regardless of the city’s geography and temperature, the road’s water drainage system is integral to maintaining roads, cities in India lack comprehensive stormwater plans which leads to all water flowing on the carriageway, leading to problems.

Another contributor to poor quality roads is deficiency of asphalt in the mix, the binding agent in the roads. When the percentage of asphalt, an expensive component, is reduced the roads fall apart faster. Ideally 5.5% of the entire mix by volume should be asphalt. Patchwork for road repair without proper binding agents, such as tack coat, will only be a temporary fix.

A senior scientist from the Indian Institute of Science, Bengaluru, explains that a problem particularly observed in Karnataka is the overlaying and not re-laying roads. “We are not going to the base level to remove the problem and stabilize the bottom layers. Until we do that, the problems will remain,” he explained.

Lack of coordination between agencies poses a major challenge for roads. Take, for example, roads in Thiruvananthapuram. Owing to a lack of coordination among various agencies like the Kerala Water Authority, the local bodies, and the Public Works Department, even newly-tarred roads are often dug within days after the work is completed. In Chennai and Bengaluru, the construction of metro rail tracks has caused many roads to be partially barricaded or dug up, causing other cascading problems.

**What can be done?**

These increasing accidents have drawn attention to the absence of good quality roads and lack of indicators to identify and mark potholes and alert drivers/motorists to the same. The following short-term and long-term solutions can be considered to reduce and prevent such accidents in the future

● Identification and marking of black spots / accident prone zones

● Round the clock relief team in districts with frequent incidents

● Deploying civic volunteers / traffic policemen to ensure that vehicles on roads riddled with potholes to ensure that vehicles don’t over speed

● Regular road safety audits to identify high-risk areas prone to potholes can reduce accidents. Improved quality control in road construction and repair, including use of durable materials and laser rangefinders, can prevent pothole formation.

● Implementing a rapid response mechanism for pothole repair, such as mobile road maintenance units equipped with modern patching equipment, can reduce accidents. Ensuring timely maintenance and inspections can prevent potholes from developing into serious hazards.

● Repairing cracks which appear on road surface as quickly as possible can ensure that these cracks don’t develop further and become potholes

● Deploying mobile apps and hotlines for the public to report potholes can ensure faster repairs. Engaging the community in identifying potholes allows local authorities to prioritize critical repairs. For this the authorities can collaborate with Google as Google Maps already has a feature where people can submit reports of various things, essentially google would have to just add an option.

● Ensuring dedicated funds for road maintenance and transparent allocation of resources can enhance road safety. Policies mandating immediate attention to reported potholes would hold authorities accountable.

● Public Private Partnership. The government could join hands with private players, NGOs and trusts who can fix the potholes in a manner that ensures that the quality of work is good. Case in point PotHoleRaja. PotHoleRaja’s main focus is to make road’s pothole-free. The authorities have supported them by giving approvals to repair roads. Further they have come up with an innovation known as GridMats which is a honeycomb structure recycled from polypropylene waste, these mats can go under the surface of the road as reinforcement to absorb and distribute the vehicular load evenly.

● A principal scientist from Central Road Research Institute, Delhi states that if roads are built and maintained following Indian Roads Congress guidelines there won’t be potholes. These guidelines include points such as desilting the roadside drains, sealing cracks immediately, and laying a renewal coat when required.

● A citizen activist from Kormangala stresses that ward level understanding needs to be developed. He stresses that fixing potholes is a stopgap solution and that focus should rather be on improving the road infrastructure. He proposes a solution where ward committees have the monitoring capability which allows them to monitor the revenue earmarked for road management. A road quality plan at ward level needs to be developed.

● Another citizen activist while stating an instance of how the Karnataka Power Transmission Corporation Ltd’s plans are not in sync with that of the Bengaluru Water Supply and Sewerage Board (BWSSB) or Bengaluru Electricity Supply Company Ltd. (BESCOM), suggests that a utility mapping exercise should be undertaken so that it is ensured that all plans of respective civic agencies are in tandem with each other. This will ensure that roads are not frequently dug up.

● In Kerala, contractors are responsible for ensuring the quality of roads for a stipulated period of time, failing which they could lose their security deposit. The Kerala Public Works department also decided in 2022 to display boards with the names and contact details of contractors and engineers concerned on roads once the maintenance work was over.

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