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Let`s rubberise our roads

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EVERY road vehicle user in Malaysia has experienced delays in travel as councils patch up numerous potholes in our road networks. It does not matter whether it is in a rich area or within a low-income community, the problem of potholes is common.

Apparently, our northern neighbour has less of a pothole problem. I saw this myself during a recent trip to southern Thailand. Why is this? The answer lies in the use of rubber in road construction. Yes, you read that right.

By incorporating some small percentage of rubber in the bitumen mix, the durability of roads improves significantly. As a result, roads are damaged less often. The savings in maintenance costs would more than pay for the costs of incorporating rubber.

Thailand first experimented with the technology when it was looking for ways to reduce its large stocks of rubber which were suppressing the global price of natural rubber. By using some rubber when resurfacing and building roads, the Thais not only managed to bring down stock levels but also improved financials in road maintenance. Add to that the increased driving comfort experienced by road users and one can understand why Thailand has now made putting rubber in roads standard practice.

The rubber mixed with bitumen can be in many forms. There have been experiments done with rubber latex and the dry rubber, but the findings show that using the rubber cup lumps directly is most cost-effective (cup lump is the dried rubber lump that forms in the cup tied to the rubber tree into which latex drips). A recent announcement by the Plantation and Commodities Minister saying Malaysia will begin incorporating rubber in the country's roads in a big way is encouraging.

Useful material: A test road being built using cup lump-modified bitumen designed by Malaysian Rubber Board scientists in February 2020. — Malaysian Rubber Board

A few years ago, the Rubber Research Institute of Malaysia undertook extensive research to study rubberised roads. In fact, a 1km stretch of a rubberised road was built at a site in Sungai Buloh, Selangor, for the study. As expected, the results were convincing.

But the hesitancy to use such technology by state road authorities was always pinned down to the additional costs. Inadvertently, they failed to look at the reduced costs of maintenance and the many other benefits that will accrue through such an investment. A potentially huge benefit will go to rubber smallholders.

If all the natural rubber-producing countries can come together and make a decision to incorporate natural rubber in their roads, imagine what that will do to the world's consumption of natural rubber.

Though the bitumen mix only takes at the most 6% of rubber, the amount consumed can be very high considering the thousands of kilometres of roads built. The amount would be much higher if we can influence the international standards body on road construction to make it standard practice.

The use of polymer-modified bitumen in roads has been around for years now. But only synthetic polymer has been used. Using natural rubber should be preferred as the world strives to shift away from synthetics to support sustainability and low-carbon processes.

Natural rubber-producing countries must take up this challenge jointly. For far too long we have relied mainly on tyre makers to buy our natural rubber. Almost 70% of the world's production ends up in tyres. This is not healthy because rubber producers will always be at their mercy.

Tyre manufacturers tend to dictate terms, which may not always be to our benefit. We need to move away from being too dependent on them. Rubberised roads are an opportunity to reduce such dependence. But only together as one can producers tap this potential.

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