THE HINDU

Rs. 50-crore project to use plastics in laying of roads

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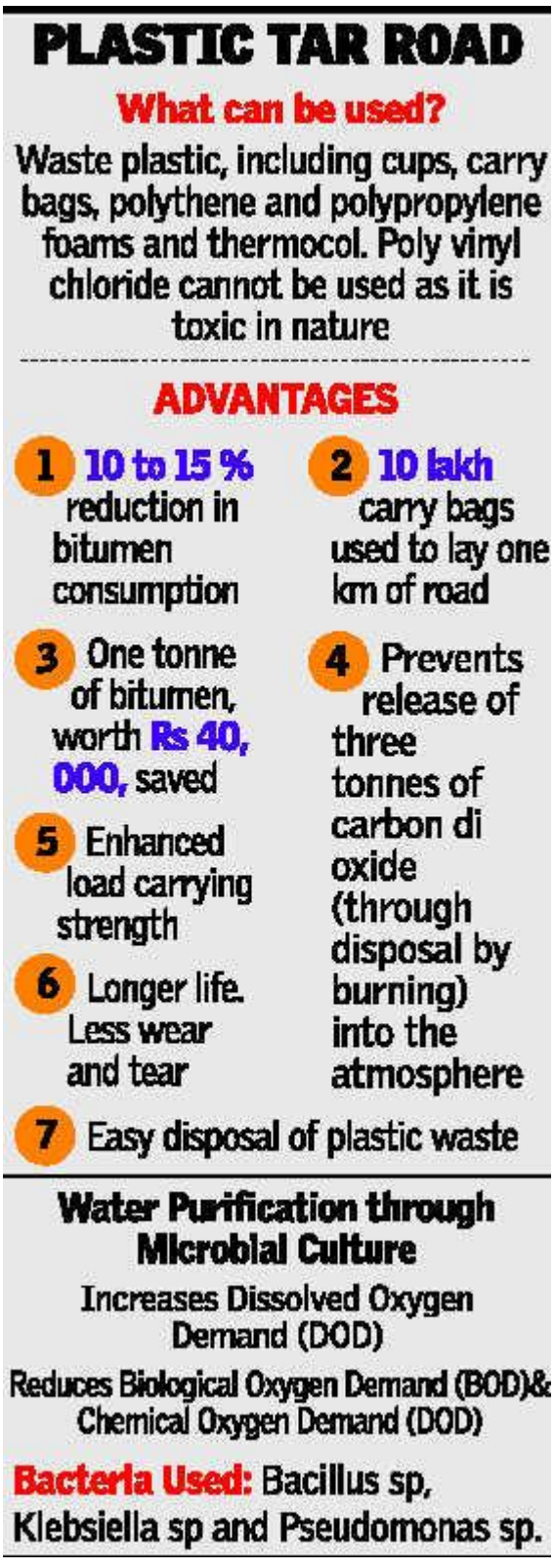
Additional Rs. 50 crore for lake purification in State



Enthused by the quality and durability of roads laid using waste plastics, Chief Minister Jayalalithaa on Thursday unveiled yet another project to make use of plastics for the laying of roads at a cost of Rs. 50 crore.

Making a statement in the Assembly, she also announced a Rs. 50-crore scheme for the following: to purify water in the lakes in the State through microbial culture, using non-pathogenic bacteria; to rejuvenate plants in Shola forests and to implement schemes through Ooty lake protection fund and the Gulf of Mannar Biosphere Reserve Trust.

The Chief Minister said the government allotted Rs. 153.50 crore in 2011-12 for laying tar roads using plastics in rural areas, covering 1,255 km. So far, 1,002 km distance of road has been laid. This year also 1000 km will be covered.

As far as urban areas are concerned, Rs. 153.61 crore was allotted. Again, in 2012-13, the government released Rs. 219.58 crore for laying 499 km roads. The government has issued orders for laying 100 km in 2013-14.

Besides making use of the Rs. 50 crore from the Environment Protection and Renewable Energy Development Fund, roads covering 446 km were renovated. In 2012-13, about 580 km long roads were covered.

Lake purification

Ms. Jayalalithaa said microbial culture would be used to purify the water in lakes.

"It is a cost-effective method and can increase the Dissolved Oxygen and reduce the Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD), nitrogen and phosphorus," said R. Elangovan, executive engineer of the Public Works

Department.

He said the method proved effective in Ooty Lake and the bacteria were available in liquid and powder forms.

“Though there are 10 strains, *Bacillus* species, *Klebsiella* species and *Pseudomonas* species are widely used,” Mr Elangovan explained.

New TNCB buildings

The Chief Minister announced new buildings for Tamil Nadu Pollution Control Board (TNPCB) offices in Sivaganga, Dindigul, Namakkal, and Virudhunagar districts at a cost of Rs. 12 crore.

She also extended the housing loan facility to the TNPCB workers, which will benefit 700 workers.

A technology that makes the most of the

The technology is used for laying “all-weather roads”

From October 4, 2002, when the first ‘plastic road’ was laid on Lenin Street, Kovilpatti in Tuticorin district, the technology of using waste plastic with stone for laying roads has come a long way.

Developed by the Department of Chemistry of Thiagarajar College of Engineering, Madurai, in 2001 and patented in 2002, the technology has been literally going places. It is now used in several other States, including Kerala, West Bengal and Himachal Pradesh, to lay “all-weather” roads.

It has also come as an answer to municipal solid waste management. Plastic is common man’s friend and its disposal is a human problem, says R. Vasudevan, who led the research into use of waste plastic for road laying.

According to him, used plastic comprises 2.8 per cent of municipal solid waste in Chennai, compared to 1.46 per cent of Delhi, 1.54 per cent of Kolkata and 0.9 per cent of Bangalore. Disposal of waste plastic either by burning or land filling is hazardous to the environment. The plastic road process involves shredding of waste plastic to small pieces (1.6 to 2.5 mm) and mixing with aggregate at a temperature of 170 degree C. Molten plastic waste laminates the stone in 30 seconds and plastic coated aggregate is added to bitumen for laying roads. The strength of the road gets doubled when plastic is used, says Dr. Vasudevan.

It can withstand heavy load and traffic and is not affected by water stagnation. Its minimum life is seven years, with zero maintenance. Performance studies carried out on plastic roads in Tamil Nadu, under Central Road Research Institute specifications, have shown “good results.” It is an in situ process and can be easily adopted, without use of additional machinery. There is no investment but only saving. Waste plastic found along road flanks in any area is enough for value addition, he says.

- ***“Strength of the road gets doubled when plastic is used”***
- ***“Plastic road is not affected by water stagnation”***