



SUSTAINABILITY OF ROADS : TOP PRIORITY

Efficient movement of goods and people is a prerequisite for the economic development of a nation. Growth of a good and credible road infrastructure is essential for the growth of road transport industry as it facilitates a smoother and faster operation of motor vehicles. Roads also improve the environmental value of the surrounding area by acting as “ecological corridors”. Anything that can continue on an indefinite basis is sustainable. Sustainability is thus, the capacity to continue into the long term future.

The Central and State Government departments contribute to sustainable development through their construction and maintenance activities. These include the building of new roads, structures, replacement of the worn out components whether they are of the road surface, bridge, road markings, signs, traffic lights etc. Sustainable development does not demand new or wider roads. We already have a good network of roads including the National Highways, State Highways, Rural Roads and other categories of roads. As is well known that the Union Government has launched major initiatives to upgrade and strengthen not only the National Highways under National Highway Development Project (NHDP) but also the State Roads, Village Roads etc through the Pradhan Mantri Gram Sadak Yojana (PMGSY). The estimated cost for these major initiatives, scheduled for implementation by the year 2015, is expected to be over Rs. 2,40,000 crore.

Significant thought is required to be given to our infrastructure development programmes, in terms of sustainability. Sustaining roads for the future will

require:

- Management of assets and resources
- Reducing Energy Consumption
- Reducing Emissions
- Preserving Landscape and Heritage
- Respect for People
- Partnership for Better Business

The road construction industry is both a foundation to economic development and also the largest consumer of non-renewable resources. Whether it is earth, water or air, all these natural resources have finite limits and are important for sustained economic growth within a region. The value of any finite resource is governed by its current availability and cost of extraction and no value is attributed to the loss of that prestigious resource. It is not until demand exceeds supply does the free market begin to account for the depletions of the limited resources by rapidly increasing the costs. Conservation of natural resources should, therefore, be the primary objective of the road planners and designers in order to achieve sustainable roads.

Energy is consumed in the extraction, processing and transport of construction materials, construction and demolition activities etc. Construction of roads is mainly a material-intensive industry and has a long history of recycling albeit erratic. There is an economic logic — whereas the recycled material adds value to the road asset and saves money, it also provides an outlet for waste utilization. Pond ash, waste plastic, powdered rubber tyres and broken concrete should routinely find their way into the under





layers and on surfaces of roads, thereby reducing the overall energy consumption and minimizing emission of Carbon Dioxide. A recent study carried out by the World Bank has revealed that increased access to roads has translated into increase in the number of motor vehicles leading to enhanced energy consumption. For low density areas, super-efficient cars and trucks, running on an increasing proportion of renewable fuels, would play an important role in sustainable transport system. But in a large proportion of urban areas, cars will have to play a decreasing share of the transport service. Even if sustainability were not becoming critical, the growing problems of congestion, parking and car ownership costs would create pressure for change. This can happen only when there is an efficient mass rapid transport system in place and the citizens take up the healthy habit of walking a few steps.

Before constructing or widening roads the agency must consider the impact of the road and users' vehicles on the environment. The consumption of fossil fuels leads to the production of greenhouse gases. These emissions contribute to climatic changes, which are predicted to cause an increased number of storms, more droughts and higher sea levels. Recent advances in technology have delivered significant reductions in vehicle emissions which are being more than neutralized by ever increasing number of vehicles. However, they continue to be an important factor in both local air quality and levels of greenhouse gases. Traffic noise and smoke pollution are major concerns for communities living close to any road network. Additionally, runoff from roads can adversely affect watercourses and groundwater, with spillage of hazardous loads. Significant emissions also arise from construction and maintenance activities. It is the agency's responsibility to ensure that these emissions are minimized.

The construction agencies should understand their responsibilities towards the local communities that live in proximity to the highways. This requires considerations during planning of new road schemes

and construction and operation activities. The contractors should be committed to employing and motivating staff from amongst the local communities. The agencies should also strive to provide a safe and healthy place of work; improve the skills and knowledge of its employees and contractors; employ a fully registered and skilled workforce; provide appropriate training that benefits both the business and the employees' personal development.

The Procurement Strategy, 'Delivering Best Value Solutions and Services', sets out how the construction agencies could improve quality, reduce life cycle costs, to focus on deliverable outcomes, to set the right technical and performance standards in contracts. This would be achieved through the development of longer-term partnerships, an integrated supply chain with suppliers being involved early in projects, with better risk sharing between partners and performance measurement with continual improvement targets. This approach is a key element for new highway improvement and maintenance contracts. The Government of India have also realized the need to involve the Private sector and have, therefore, promoted the development of National Highways under NHDP Phases III to VII on PPP basis. Through close co-operation with private partners the Government hopes to reduce capital costs and construction times, have fewer defects and accidents and increase the turnover and profit for all.

Road agencies have responsibilities to the society beyond just the creation of a road network. They also have a responsibility that these roads are constructed in the most sustainable way. Engineers and planners, therefore, have an enviable opportunity to be at the leading edge of managing sustainable development to the benefit of the entire community.

(R.P. Indoria)
Secretary General

