TECHNOLOGY FACTSHEET

IMPROVEMENT OF THE CONDITION OF BYROADS [1]

1. **Sector:** Transport

2. **Introduction:** Transport sector is a major GHG emitting sector in Sri Lanka. About 60% of the air pollution (especially in Colombo City) comes from this sector (AirMAC, 2009). The main way of transportation is through the road network, which is supplemented by rail, air, and water transport means. Out of passenger transport, buses carry about 50% and railways carry about 4% of the passengers, while the rest of the passengers are carried by the other modes (Jayaweera, 2011). Road transport accounts for about 96% of passenger transportation and 99% of freight transportation (Jayaweera, 2011). Currently, the transport sector in Sri Lanka utilizes petroleum-based fossil fuels, leading to significant amounts of CO_2 and other GHG emissions (e.g. N2O, CH4) considered under the United Nations Framework Convention on Climate Change (UNFCCC) and Kyoto Protocol. Technology transfer, defined as the flow of experience, know-how and equipment between and within countries, is one of the priorities under the United nations Framework Convention on Climate Change (UNFCCC). Technology needs assessment (TNA) is a key element of the technology transfer, and is carried out with the intention of moving towards cleaner, less GHG emitting technologies.

3. **Technology name:** Improvement of the condition of byroads

4. **Technology characteristics:** Proper maintenance of byroads for efficient and smooth flow of traffic with lower CO_2 emissions; proper maintenance of the road edges/shoulders to prevent erodibility and damage. The material used in road construction is also important in relation to CO_2 emissions; although construction of asphalt/concrete roads are favored most of the time, a study by Prof. R. Shanthini at University of Peradeniya, Sri Lanka, has found that 'metalling and tarring' roads have lower emissions and high durability for roads in rural sector.

5. **Country specific/ applicability:** Applicable island wide

6. **Status of the technology in the country and its future market potential:** Currently, most of the main roads are occupied by heavy volumes of vehicles, and passengers tend to choose certain byroads, bypassing certain heavily congested main roads. However, most of the time byroads are poorly maintained, causing vehicle damage and slower driving speed. This is mostly obvious in situations when the byroads are used as detours. Proper and timely road maintenance practices should be enforced through the respective local authorities.

7. **Barriers:** -

8. **Benefits**

[1] **This fact sheet has been extracted from TNA Report – Mitigation for Sri Lanka. You can access the complete report from the TNA project website** http://tech-action.org/

a. Socioeconomic:
   - It will help avoid unnecessary traffic delays and more idle time on roads caused by slow driving under poor road conditions.
   - Smoother flow of vehicles on proper byroads causes efficient fuel consumption and less damage to vehicles

b. Environmental
   - Lowered emissions due to better fuel use efficiency (But this is only a short term benefit, as smoother flow of vehicles with no congestion can draw more vehicles to the road over time).

9. Operations: -

10. Costs: Can be applicable within a low cost budget.

11. References

- AirMAC 2009. Clean Air 2015. Air Resource Management Center. Ministry of Environment & Natural Resources, Sri Lanka
- Jayaweera, D.S. 2011. Analysis on effectiveness of fiscal strategies introduced on hybrid vehicles and market response- policy reforms on clean air. Presentation at the Center for Science and Environment Conference, India, held on September 28-29,2011