New Perspectives in Land Transport Policy

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Abstract

This paper discusses the current status of the land transport industry in Sri Lanka. It assesses the current and future demand for transport and discusses the limitations that are posed by current practices. The paper identifies five areas of policy-led change that are required to ensure that Sri Lanka responds in a timely manner to the future challenges for increased mobility, particularly for increased motorisation which is caused by increasing incomes.

Status of the Industry

Sri Lanka has a long and checkered history of multi-modal land transport development made up of highways, railways, buses and freight transport networks. However, the performance of all of these networks is currently considered by most users as unsatisfactory even though the demand for transport has been steadily increasing. The current transport activity estimated by the different modes is presented in Table 1.

At present, there is an estimated annual demand for nearly 100 billion passenger km to be carried by different modes of motorised transport that provide an estimated 27.7 billion vehicle kms through a fleet of nearly 3 million road vehicles and around 150 power sets and railway engines. In this endeavour, road transport accounts for 95 percent of passenger travel volume and 98 percent of goods transport in the country.

Buses carry 55 percent of the passenger kms, while para-transit, (made up of chartered and non-route buses, hired vans, three wheelers and taxis) carry another 11 percent (Table 1). Transport activity is most dominant within the Colombo City and its environs with an estimated 220,000 vehicles entering the city daily carrying over 1 million passengers of which, 62% arrive by bus, whereas the railway carries another 12% with only 26% using the modes of private transport.(Kumarage and Weerawardena, 2009),

Vehicle ownership

Currently, motor vehicle ownership in Sri Lanka is around 150 vehicles per 1,000 persons. This is the same as in Singapore. However, in Sri Lanka around two-thirds of the motor vehicle fleet is made up of two and three wheelers. Buses used for public transport make up around 24,000 vehicles representing less than 1% of the fleet, while all forms of goods vehicles including land vehicles make up around 300,000 vehicles. Vehicle ownership has been growing at 11 percent per annum in the last decade, the highest in history. It is possible that Sri Lanka will observe a slowdown in registration of two and three wheelers with an increase in four-wheeled vehicles due to income increases, availability of low-cost cars and the reduction of import duties. With per capita incomes increase above USD 2000, it is likely that the next few decades will see an even higher rate of motorisation in Sri Lanka. As per capita incomes are expected to increase over USD 4,000 within the decade, most families would be able to afford a private vehicle (Kumarage, 2010).

Passenger transportation

Even though public transport has provided the backbone of passenger transport services over the last 50 years, continuing neglect by successive governments has led to its gradual deterioration and lack of modernisation. Passenger dissatisfaction is high, leading to an increase in motorisation made possible by rising incomes, especially in urban areas.

As shown in Figure 1 (Kumarage, 2010), the growth in passenger travel in Sri Lanka has kept steady pace with per capita incomes. This currently represents an average per capita mobility of nearly 5,000 passenger kms per annum and a vehicle use of 1,300 km per annum per person. According to international norms, this is around 3 times the personal mobility observed for other countries having a per capita income of USD 2,000

Table 1 Transport activities and modal shares of Sri Lanka in 2011*

	Vehicle Km (mn.)	%	Passenger Km (mn.)	%	Tonne km (mn.)	%
Bus	1,379	5	55,177	55		0
Railways	9	0	5,365	5	134.8	2
Private Vehicles	16,605	60	25,759	26		0
Para-Transit	4,841	18	11,348	11		0
Goods/Land Vehicles	4,819	17	2,585	3	6,436	98
Water Transport	3	0		0	32	0
Total	27,657	100	100,236	100	6,603	100

* Estimate by the Author

(Shaefer, 2008). As seen in Figure 1, this higher level of mobility has been observed for several decades starting with the rapid expansion of islandwide bus services by the nationalised Ceylon Transport Board (CTB) in the 1960s where mobility rates increased by 7 to 8 percent per annum even though there was no corresponding increase in incomes.

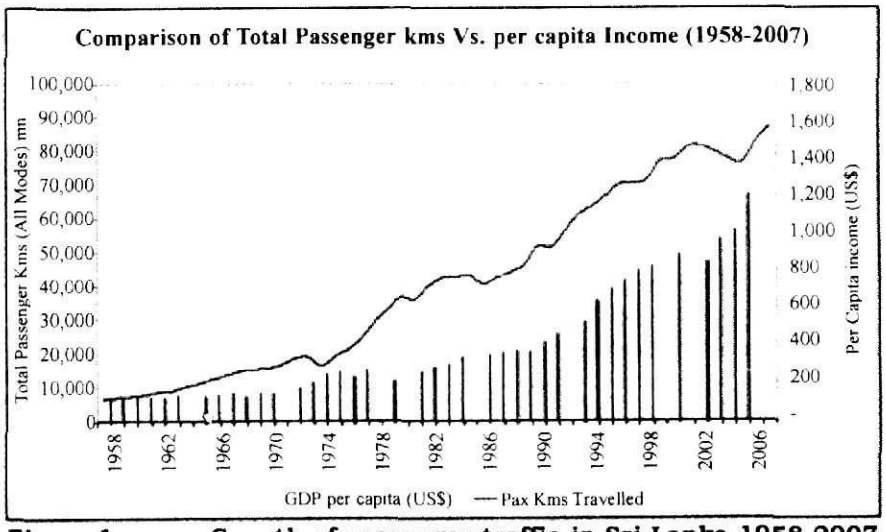

Figure 1 **Growth of passenger traffic in Sri Lanka 1958-2007**

Road network

Sri Lanka has a reasonably well-connected road network of over 100,000 kms that provides satisfactory accessibility. Road density per km² is one of the highest in the region. Most of the national and provincial roads and the majority of urban roads making up around 30,000 km are paved. Nearly 30% of these roads have been rehabilitated or are in the process of being rehabilitated.

The national highway network consists of 11,919 km of roads and 4,200 bridges. As shown in Table 2 (Kumarage, 2010), the extent of road at lower levels of the network is even more impressive boasting over 80,000 km of rural roads in the country. However, the performance of the network in terms of speed and safety are not impressive, and in fact, may be termed unsatisfactory. According to the road condition data collected in 2008, only 33% of the national road network is in reasonably good condition. Majority of the balance roads are presently in unsatisfactory condition or lacking the required capacity or proper geometric standards, thus contributing to unnecessary delays and accidents. In fact, about 9% of the length of the network has a surface roughness of more than 10 m/km which is considered most unsatisfactory and should be classified as barely motorable. With the national network in such poor standard, the provincial and local authority roads for which there are no measured indicators, are found to have even worse conditions. The first of a set of expressways is to be opened this year. This will add around 400 km to the road network connecting provincial centres, the port and the airport.

Railway transport

The full extent of the railway network in Sri Lanka was in 1923 when it had 1,540 km. Since then, except for a few new links, and double tracking, line has been retracted and abandoned in several areas, reducing the line to 1,447 km with 172 stations and 161 sub-stations. It has around 150 locomotives and power sets in active service with around 550 passenger carriages and 900 freight wagons in operating condition and some track destroyed during the civil conflict are being restored (Ministry of Transport, 2011).

The railway requires engaging in the passenger and freight market it lost to road transport over the last several decades. With road-based congestion imposing restrictions, the railway requires more market-oriented approaches as well as a strategy to develop its markets, including access to ports and airports as well as multi-modal logistics centres and multi- modal passenger terminals inclusive of park and ride facilities to compete with improved road transport including the challenges that will be posed by the new expressway system.

Table 2 **Historical development of road network**

	National	Provincial	Access Urban	Access Rural	Total
1st Cent. BC	Road Network based on connectivity of Anuradhapura to ports in the North and East and connection between the different kingdoms and places of worship mostly in the dry zone				
11th Century	Coastal roads in the southwest after migration of people				
1815	Commencement of Road Building by British				
1905	6,024				6,024
1959	7,034			12,070	19,104
1990	10,447	14,916	2,791	66,054	94,208
2002	11,760	15,743	5,200	77,800	110,503
2009[2]	11,919	16,000	5,300	80,000	113,219

Source: Kumarage, 2010.

Bus transport

There are an estimated 23,228 buses operating public transport services in Sri Lanka. Of these, 4,758 are government-owned Sri Lanka Transport Board (SLTB) buses while the balance is privately owned. Of the privately-owned buses, 3,058 are issued inter-provincial permits by the National Transport Commission, while the others are issued permits for intra-provincial transport services by the relevant provincial authorities. The vast majority of private buses are owned by single bus operators who compete fiercely against each other on the route. Even though they are regulated, standards are poorly observed and quality of carriage has not materialised, even though there has been a high demand for investment in buses. There is no management structure for private buses, and hence, it operates mostly as an informal sector.

The SLTB is the fully government-owned bus operator and one time monopoly operator, whose market share has now reduced to 27%. It provides services throughout the country in competition with the private sector and is contracted by the National Transport Commission for a number of socially necessary services such as school buses, rural services and night services. Its primary role is to provide stability in the market and to prevent monopolistic behaviour on the part of the private operators.

Goods transport

Around 7 billion tonne kms of goods transport is undertaken in Sri Lanka annually. This translates to a per capita carriage of 340 tonne-km per capita per year. Historically, goods movement has increased by around 3 to 4 percent per annum at around half the rate of passenger mobility. The freight market share of the Sri Lanka Railway has come down to 2% in the recent past, from 32% in 1979 showing a drastic decline in the efficiency and competitiveness of the Sri Lanka Railway (SLR) in handling freight.(Kumarage, 2011)

More than 90% of the total goods carriage within Sri Lanka is handled by private sector road haulers. As in bus transport, there are very few large-scale operators. Most truck owners can be categorised as small and medium entrepreneurs (SMEs) having one or a two trucks with only a handful owning over 20 trucks. This sector too operates mostly as an informal sector.

Para-transit

Para-transit, which is predominantly made up of over 350,000 three wheelers, also includes a wide cross section of other services ranging from school services to rural vehicles, all of which are also fully deregulated and provided through the informal sector. The high rate of accidents, low productivity and collusive behaviour are reasons as to why some degree of regulatory control may be required for these sectors.

There have been some recent efforts to organise this sector. Some taxi companies have continued successful Call Centre operations in Colombo. This is now being extended to the three-wheeler industry as well. However, there is a strong preference both from passengers as well as suppliers to continue with the informal and unregulated industry.

Current Transport Sector Policies

There are two specific policy proposals that have been formulated for land transport by the respective ministries based on wider government policies set out in 2005. The National Policy on Land Transport (Ministry of Transport, 2009) has been approved by the Cabinet of Ministers. The Land Transport Policy is a comprehensive document which gives clear direction for moving away from the current move towards motorization. It calls for priority of public transport over private transport, priority of rail transport over road transport, priority of non-motorized over motorized transport. It also sets out strategies to improve the management of omnibus transport as well as para-transport by the formation of corporate entities. The National Roads Master Plan (RDA, 2007) was also completed in 2007. This sets out the development strategy for the national highways for the period up to 2016.

Current and future issues

With the anticipated 6 to 8 percent growth in GDP (Gross Domestic Product), it is expected that the demand for passenger mobility will increase at around 7 to 9 percent per annum. The vehicle growth rate is expected to reach a high of around 15% per annum. Based on this, and if the current rate of shift from public to private transport continues and taxes on vehicles and fuel remain at the current rates, the time required for doubling of road space would be 9 years. This will pose a huge burden on the economy due to the huge public investment and maintenance costs of highways, the private investment cost of vehicles and their operation and the external costs due to congestion, namely value of lost time and vehicle lost time. Vehicle km on the national network will increase from 27 billion to 55 billion vehicle kms by 2021, while passenger mobility itself will increase from 100 billion to 150 billion passenger kms per annum.

Even though Sri Lanka has a high density of roads, especially at the rural level, the quality of roads is an issue with most heavily trafficked roads having out lived their design life. The average network speed has been gradually reducing indicating that the expansion in road capacity is insufficient to keep up with the demand. This is most severe in urban areas. As a result, road speeds have not improved with many urban roads being congested during most of the day time. Road

safety is also an issue with design requirements especially those required for vulnerable road users including *non-motorised* users being inadequate or in most cases nonexistent. The opening of the expressways will improve travel between cities while making travel in and around Colombo slower due to the new traffic that would be generated by these expressways.

This will put enormous pressure on the existing transport infrastructure especially the road network in urban and suburban areas where the growth in economic activity is currently concentrated. Since it will not be possible to double the road capacity in these areas in such a short span of time, optional strategies would be to open up new urban areas or to rapidly improve quality of public transport.

Despite attempts made during the recent past, the quality and service of public transport has not kept pace in terms of modernisation and passenger comfort. This and rising per capita incomes have resulted in the gradual decrease of the share of public transport over the last three decades, even though the number of passenger carried has continued to increase the modal share carried by public transport viz a viz other modes has decreased. Estimates using TransPlan demand forecasting tools show that this will further reduce from the current 55% to 41% by 2021 and to 20% by 2031. (Kumarage, 2011)

The railway, though in continuous operation for nearly 150 years, requires re-engaging in the passenger and freight market it has lost to road transport over several decades. The depleted assets base, obsolete signal and communication system and aging rolling stock fleet severely constrain delivering a quality service to the travelling public and to goods shippers. This situation has further aggravated by the inappropriate organisation and management systems that have remained virtually unchanged over decades which are not geared to meet present- day customer requirements.

Bus Transport provided the backbone of passenger mobility since independence. The strong initiative provided by the CTB which served numerous villages in addition to urban and provincial routes also set high operating standards. However, mismanagement, lack of adequate regulatory control has gradually eroded these standards. The bus sector, even though still carrying the majority of passenger trips, is also facing a challenge in modernisation fast enough to keep pace with the changing consumer preferences.

Even though Sri Lanka had one of Asia's best public transport systems up to the 1960s, there has been neglect in introduction of modernisation for efficiency, comfort and value addition. At present, there is hardly any use of modern information and communication (ICT)-based applications or computer-based applications in the planning, operations or in the public information dissemination within the sector.

Overall, the inefficiencies of the land transport system are many. Traffic congestion costs in the Western Province alone were estimated at Rs 32 billion in 2006, while accident costs are estimated at around Rs 20 billion per annum (Kumarage, 2010). The cost of avoidable delays, breakdown, waiting time in public transport are estimated to cost at least another Rs 30 billion to users, while losses in productivity due to issues of poor reliability, flooding, damages of goods in transit and other logistics related costs of the transport network may be estimated at another Rs 40 million at least. The combined losses would thus amount to over Rs 120 billion per annum, the equivalent of the annual public investment allocation for roads in 2010. This cost translates to $1/6^{th}$ of the total expenditure on the land transport sector by both government and private sectors. Thus, the inefficiency may be termed at $1/6^{th}$ which is considerably high.

The losses amounting from sub-optimal investments and lost economic productivity, poor design and construction supervision, drainage damage and other losses cannot be accurately estimated, but is likely to be greater than this. These together almost always results in transport in all its forms and variations- be it public or private, passenger or freight, road or rail, urban or rural to be often among the most complained of public services deemed as being unsatisfactory by both private and corporate citizens.

New policy perspectives

To provide a sustainable, efficient and effective solution to satisfying the increasing demand for mobility requires a new policy perspective. The following five new policy interventions which are diametrically opposite to current practice are recommended to correct the current trend toward transport chaos.

Policy intervention 1: Prioritising public transport over private transport

Sri Lanka has been following a 'Cars-First' policy with the import liberalisation in the late 1970s. The importance given to requirements of private vehicles and the corresponding neglect of improving public transport to remain competitive with private vehicles has given Sri Lankans a clear message that travel by bus or rail should be as long as you can get a car for yourself. Clearly, the increased congestion proves that policy is not sustainable.

In order to prevent gridlock on our roads, the envisaged rapid increase in demand for mobility discussed earlier will require a strategic approach that should essentially look at improving public transport as the most formidable but yet most sustainable approach. This can only be achieved by providing quality public transport demanded by passengers as demanded in keeping with their increasing

income so that they are converted from the once captive public transport users to those who will use a bus or train by choice. This would mean providing quality vehicles, high end services, modern multi-modal terminals, auxiliary facilities such as park and ride, better stations, modernisation of facilities and technology, electronic ticketing and seamless travel.

However, none of these may be achievable in the bus or rail system unless the following reforms take place.

i. Consolidating private bus owners into manageable corporate entities based on operational features and employing competent and qualified managers to convert them from the informal to the formal sector. It is noted that as long as the private buses are characterised by informal sector behaviour, it will not be able to respond to the challenges of modernisation and customer care demanded by the modern-day customer who likes to choose from different options.

ii. The SLTB also requires its own revitalisation to become an efficiently-operated transport company. While State-owned transport companies that provide exemplary services are found in many countries, such can only be achieved if independent and professional managers are allowed to develop such institutions without being called upon to subscribe to political objectives. Trade unions must be distinct and focus on worker welfare and allow management to focus on long-term viability and customer satisfaction.

iii. The management of the railway also needs reform to survive the commercial realities of transport service provision today. Innovating its services in keeping with customer preferences and technology, utilising its assets through better scheduling and dispatching, attracting new users through provision of inter-modal carriage are opportunities that are available but un-developed.

However, the underlying requirement here is that government must realise that a right about turn is required in reforming the public transport sector to support a policy change to pursue a 'Public Transport First' policy. The failure to urgently and effectively reform the public transport sector will only allow the 'Cars-First' policy to continue to lead us to grid lock on our roads.

Policy intervention 2: Prioritising rain transport over road transport

Railways are well positioned to serve several transport applications. In Colombo and even in Kandy, it can be used to divert the excess demand for road travel to rail. It can carry large numbers of people to congested city centres in a short period of time, a feature that the road finds difficult to perform as efficiently. The railways can carry heavy containers on longer travel legs, thus shifting the concentration of manufacture from Western Province to the south, the east and the north of the country. It is well positioned to serve our international ports and airport. However, these valuable linkages need to be developed rather than merely confined to small roles such as carrying commuters at subsidised rates.

There are many opportunities that the railway has for making itself useful to the average Sri Lankan. Similarly, it has scope in electrifying the suburban services in Colombo or in carrying tourists. These are projects that have been mooted for decades but repeatedly ignored by political indifference and lacklustre leadership. Importing engines and carriages on regular basis and carrying out expensive track rehabilitations are essential for preserving an institution. But such alone is not adequate for the type of turnaround that the railway requires in Sri Lanka. What the people need from the railways is a clear resurgence of service quality that will restore the confidence in the railway that would increase its use so that the people are assured that the railway exists to support the people and not vice-versa!

To do this, the railway has to be seen as a future mode of transport and developed by giving priority to services that it can best contribute. Expanding its network in areas where it has no competitive edge should be avoided. It should concentrate on areas such as urban commuter, long distance freight and leisure travel. The railway must be considered as economic tool and priority given to develop niche areas over road developments in such areas. As such, rail- based development must be given priority over road-based development in urban areas, in connection to heavy nodes such as ports and airports and trade zones.

Policy intervention 3: Prioritising non-motorised transport over motorised transport

A return to promotion of non-motorised transport is also a timely priority. Road transport increases trip lengths unnecessarily making users captive to motorised modes of transport. In today's context where increasingly people spend 10-20% of their waking hours in travel, many countries are actively investing in promoting non-motorised travel, mostly on bicycles. Even though large modal shares are not expected, they also promote short distance travel, as well as mitigate environmental pollution caused by motorised travel. A clear policy reversal is required in road design, in building design and in transport policy interventions in providing space and facilities for use of bicycles. The idea that non-motorised transport is archaic needs to be changed with clear policies that promote bicycle use.

Policy intervention 4: Prioritising professional administration over politicised administration of the sector

One of the biggest obstacles in reforming the transport sector is the critical shortcoming of professional administrators in the sector. Much of transport today is in the hands of the informal sector. This has given ample opportunity to enable politically-aligned administrators to be placed as managers and effectively used as gatekeepers for collection of benefits as opposed to task them to develop the sector. The lack of technical and managerial leadership in the sector clearly shows that it does not have professional administration capable of internal reform or development.

One clear policy reversal should thus be to ensure by regulation that the positions of management and administration in the sector will be fill only by the professionally-qualified persons. The long-standing belief that has continued over several decades now, which is that a political discard or the kith and kin of a minister can effectively provide leadership in transport which is a technical discipline needs to be reversed.

This is clearly illustrated in the fact that there is not a single institution responsible for planning or integration in the transport sector. Existence of multiple agencies in transport service and infrastructure provision, with poor coordination between them leads to fragmentation of the legal authority to plan and to enforce agreed upon plans, which causes duplication of effort and haphazard decision-making which in turn has made internal change and development impossible. Thus external-led reform is crucial.

Policy intervention 5: Prioritising modern transport and logistics systems over traditional systems

It is well-known that more than 30% of the agriculture produce goes waste before reaching the consumer. Marked differences between farm-gate price and retail price prove the inefficiency in perishable produce transportation. Similarly, the amount of passenger time loss due to lack of bus time tables, intermodal coordination, runs in to billion of rupees a week. Accidents also contribute to over Rs 20 billion a year. Overall, the industry has had little technological innovation or systems change. The same systems that operated over the years are allowed to continue for fear of upsetting those who survive by them. These encourage the consolidation of the informal sectors which are politically powerful. However, they tend to be expensive as they promote waste and duplication of resources. The low utilisation of private buses, three wheelers and even trucks and vans are testimony to this fact. It is necessary to ensure that there is a compulsion to arrive at technological benchmarks before given years, in terms of vehicle technology, terminal design, warehouses, packaging, loading and unloading systems, etc. Systems to improve vehicle dispatching and routing are also necessary to ensure high level of productivity of resources and provision of high-quality transport services at the lowest cost.

Government policy to reverse the trend that traditional systems should endear should be replaced by a policy that favours modern and efficient systems. However, it should also be noted that over a million people are today employed in the transport sector. Many work in very oppressive conditions. Modernisation should not be an attempt to jeopardise their livelihood, but an effort to improve their employment. The billions of people whose economic welfare depend on the efficiency of transport services provided by these people should also not be made to suffer loss on account of their refusal to improve.

Conclusion

It is apparent that the transport sector in Sri Lanka requires major change in policy to meet the future challenges that are to be posed by increasing mobility and vehicle ownership. In this case, five policy U-turns are essential to ensure that Sri Lanka can expect an efficient and sustainable transport system that will meet the expectation of it people and corporate citizens.

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Footnotes

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