

2.2 Action Plan for Technology 1: Integration of Non - motorized transport methods along with regularized public transport system

2.2.1 Description of the Technology

The transport sector contributes a major portion of the overall GHG emissions in the country. With the current trend of increasing fleet of vehicles on the road, there is a urgent need to pay attention in exploring means of reducing congestion, especially during peak hours and at city centers. One option would be to promote more public transportation, in conjunction with non-motorized transportation, especially walking and bicycling in congested areas and city centers. The main objective of Technology 1 is the reduction of the existing traffic congestion in Sri Lanka, especially during peak hours and at city centers. Currently, bicycling has become a high risk mode of transport, especially due to disregard of road rules by majority of the drivers. Therefore, initial focus needs to be placed on strict enforcement with regard to road rules and facilitating walking as a better mode of non-motorized transport through improved pedestrian facilities.

Under this technology, priority has been given for improving pedestrian facilities to promote walking, as bicycling is still not a viable option given the large volume of traffic on busy roads and poor enforcement of road rules. Thus having pedestrian walkways, sidewalks, and proper electronic signaling and warning signposts at pedestrian crossings, etc., would be promoted under this technology. As these non-motorized modes could serve as means of proper access to public transport, promoting non-motorized transport will also help popularizing use of the public transportation. However, since non-motorized transport reduces speed of travel, the public transport need to be better regularized for proper time planning and to accrue desired benefits out of the combined public and non-motorized transportation. Non-motorized transport adds green benefits including the reduction of greenhouse gas emissions and overall pollution, while contributing to improve the health.

This technology option has prioritized in view of it is less expensive, ability to facilitate reducing traffic congestion, potential environmental benefits including greenhouse gas mitigation potential, low air pollution, reducing noise pollution, health benefits etc. Details on the technology could be found in the Annex C - Technology Fact Sheets, TNA Report (Part I).

2.2.2 Target for technology transfer and diffusion

Development of majority of the infrastructure (sidewalks, green walkways, signposts and signaling at pedestrian crossings, etc.) is proposed for the suburban areas within a radius of about 10 km of Colombo. Sidewalks and traffic lights at major pedestrian crossings in a road length of about 100 km, development of walkway fragments with pedestrian attractions and facilities, starting from public transport terminals for a total length of about 20 km, and warning signposts by yellow pedestrian crossings are recommended for roads with heavy traffic by 2016.

2.2.3 Barriers to the technology diffusion

Heavy traffic congestion at city centers result in high amounts of GHG emissions, while causing traffic delays as well. Promotion of public transportation, in conjunction with non-motorized transportation is seen as a better option for resolving this issue. Given the potential risks associated with bicycling as a non-motorized method of transport due to obvious reasons, initial focus will be on strict enforcement of road rules and facilitating walking through the improvement of pedestrian facilities. However, several potential barriers that would impede progress of technology implementation have been identified.

List of key barriers with and hierarchical classification is given in table 2.6.

Table 2.6: List of Key Barriers and Hierarchy Classification for Integration of Non- motorized transport methods along with regularized public transport system

Technology Name: Integration of Non- motorized transport methods along with regularized public transport system			
No.	Key Barriers Identified	Priority Rank	Category of Barriers
1.	Inadequate of finances	1	Economic and financial
2.	Absence of enabling policy and legal environment to promote the technology	2	Policy, legal, and regulatory
3.	Lack of interest towards non-motorized transport due to lack of road safety, especially on roads with heavy traffic.	7	Social, cultural, and behavioral
4.	Attitudinal indifference towards reverting back to non-motorized transportation by the public.	8	Social, cultural, and behavioral
5.	Negative public perception on non-motorized transportation as a primitive method.	3	Social, cultural, and behavioral
6.	Inadequate public awareness and poor enforcement of road rules.	6	Social, cultural, and behavioral
7.	No easy access to non-motorized transport facilities from the respective public transport terminals.	3	Other barriers
8.	Inadequate space to develop sidewalks and walkways.	4	Other barriers
9.	Lack of proper sidewalks and walkways.	4	Other barriers
10.	Lack of proper road furniture.	5	Other barriers

2.2.4 Proposed action plans for Integration of Non- motorized transport methods along with regularized public transport system

The Proposed Action Plan is provided in table 2.7.

The proposed actions are listed in table 2.3. Action 10 in the report II (Promoting better attitude towards non-motorized transport through awareness creation and developing attractive pedestrian facilities) is included along with the Action 5 and action 7. Action 11 in the report II (Construction of proper, attractive walkways and sidewalks) is included in action 7.

TRANSPORT SECTOR

Action plans for Technology 1

Table 2.7: Proposed Action plans for Technology 1: Integration of Non-motorized transport methods along with regularized public transport system

Measure/Action 1: Financial support from the Government or donors and all new and rehabilitation road projects to increase finances to accommodate the pedestrian facilities (i.e. traffic signals and construction of new sidewalks on main roads, as necessary)					
Justification for the action: Due to limited allocations currently available from the national budget, there is a need for enhancing Government financing and explore donor support.					
Action/Sub Action No.	Priority Rank	Responsibility of Implementation	Time frame	Cost & Funding Source US \$ millions	Indicators
Action 1: Sub action 1. Establishing sidewalks and traffic signals at necessary pedestrian crossings in a road length of 100 km	V. High	Road development authority (RDA), Local authorities, Provincial road development authority (PRDA), Police	2014 - 2016	8.5 m Local or donors	- establishing sidewalks and traffic signals at necessary pedestrian crossings in a road length of 100 km by 2016,
Measure/Action 2: Review and reform existing policy and legal frameworks to promote developing pedestrian and other non-motorized transport facilities					
Justification for the action: In the absence of enabling policy and legal environment for promoting non-motorized transportation, there is a need to make the necessary adjustments to the existing draft national transport policy					

Action*/Sub Action No.	Priority Rank	Responsibility of Implementation	Time frame	Cost & Funding Source US \$ millions	Indicators
Action 2: Sub action 1. Incorporate of provisions to provide better facilities and rights for pedestrians and non-motorized transportation and regularization of public transport in the draft national transport policy Sub action 2. Provisions to promote traffic signal synchronization	V. High	MoT, Ministry of private transport, Ministry of highways, UDA, National Physical Planning Dept, Police	2014 - 2016	0.01 Local	- Completion of the activities in sub action 1& 2 by 2016.
Measure/Action 3: Introducing automated fine systems along with amendments to the Motor Traffic Act					
Justification for the action: There is lack of public awareness on and poor enforcement of existing road rules requiring actions for having a proper penalty for violators of road rules.					
Action*/Sub Action No.	Priority Rank	Responsibility of Implementation	Time frame	Cost & Funding Source US \$ millions	Indicators
Action 3: Sub action 1. Amendment to the Motor Traffic Act to provide penalties for road rule violators, and subsequent gazette notification of such penalties, following the cabinet approval	High	MoT, Police	2014 - 2016	0.01 Local	- Amendment of the motor traffic act with relevant provisions by 2016.

Measure/Action 4: Improvement of road discipline through law enforcement and other means and increased awareness among road users including the drivers of different categories of vehicles

Justification for the action: To overcome the barrier of low tendency towards using non-motorized transport due to lack of road safety, especially on roads with heavy traffic

Action*/Sub Action No.	Priority Rank	Responsibility of Implementation	Time frame	Cost & Funding Source US \$ millions	Indicators
Action 4: Sub action 1. Quarterly workshops for Government and provincial Council Officials and monthly workshops for new licensees Sub action 2. Weekly TV and radio programs and advertisements	Medium	MoT, Police, RDA, Motor Traffic Department (DMT), National Council for road safety, University of Moratuwa, CMC, CETRAC, SLMA	2014 - 2016	US \$ 0.1 m Local or donors US \$ 1.9 m Local or donors	1. More than 90% of the workshops completed by 2016 with participation of over 80% of the anticipated participants. 2. Half-hour monthly TV programs- ~90% by 2016.

Measure/Action 5: Awareness creation on the health and cleaner air benefits and promotion of non-motorized transport

Justification for the action: The current trend in the country is for increased motorized transport and to possess personal vehicles, and there is some reluctance to revert back to non-motorized transportation among the general public. Therefore, there is a need for awareness creation on the overall benefits of non-motorized transport

Action*/Sub Action No.	Priority Rank	Responsibility of Implementation	Time frame	Cost & Funding Source US \$ millions	Indicators
Action 5: Sub action 1. Weekly TV and radio advertisements	Medium	MoT, Ministry of Health, Police, TV and radio	2014 - 2016	US \$ 1.1 m Local/ Donors	1. Activities of sub section 1 completed by 2016

Sub action 2. Research and Development activities on vehicular emissions and health impacts		station/s of choice, and		US \$ 1 m Local/ Donors	2. Activities of sub section 2 completed by 2016
----------------------------------------------------------------------------------------------------	--	--------------------------	--	----------------------------	--------------------------------------------------

Measure/Action 6: Construction of walkways connecting sidewalks to main bus and railway terminals together with attractive pedestrian facilities such as benches and bicycle racks

Justification for the action: Currently certain major bus or train terminals in some cities do not have proper walkways, to continue the journey on foot. Therefore proper walkways with attractive pedestrian facilities such as benches, bike racks, shady trees, and small picnic tables starting from the public transport terminals need to be provided to promote walking/non-motorized transport.

Action*/Sub Action No.	Priority Rank	Responsibility of Implementation	Time frame	Cost & Funding Source US \$ millions	Indicators
<p>Action 6:</p> <p>Sub action 1. Establishment of walkway fragments connecting the public transport terminals and the sidewalks on main roads, while trying to bring all the public transportation (i.e. bus and train) terminals in close proximity</p> <p>Sub action 2. Provide pedestrian facilities (i.e. bike racks, benches, trees, sign posts, etc.) within the walkways</p>	V. High	Urban Development Authority (UDA), RDA, Local authorities, Police	2014 - 2016	US \$ 2 m Local /Donors US \$ 0.3 m Local/ Donors	- Walkways of a total of 20 km length with pedestrian facilities, completed by 2016.

Measure/Action 7: Design and construction of better sidewalks and walkways and land acquisition, as appropriate

Justification for the action: Due to heavy traffic and lack of space, certain sidewalks have become very narrow and close to the moving traffic requiring protective fencing or widening such sidewalks through land acquisition.

Action*/Sub Action No.	Priority Rank	Responsibility of Implementation	Time frame	Cost & Funding Source US \$ millions	Indicators
Action 7: Sub action 1. Fencing with florescent colored metal blocks and/or widening of selected narrow sidewalks accommodating all bus bays, and replacement of poor quality sidewalks/ shoulders in selected suburban areas of Colombo	High	RDA, PRDA, local authorities, Police	2014 - 2016	US \$ 13 m Local/Donors	- All related work of the action 7 completed by 2016.
Measure/Action 8: Provision of all required road furniture					
Justification for the action: The number of fatal accidents on yellow pedestrian crossings has been increasing, and these crossing lines are hardly visible from distance especially at night; therefore advance warning in the form of signposts are required to be provided with pedestrian crossing. In addition, other prominent signposts are essential in some public places such as temples, hospitals, schools, etc., where there is high density of pedestrian movements.					
Action*/Sub Action No.	Priority Rank	Responsibility of Implementation	Time frame	Cost & Funding Source US \$ millions	Indicators
Action 8: Establish all required road furniture (i.e. proper yellow lines and yellow poles by pedestrian crossings for visibility at night; tactile tiles for visually impaired people)	High	RDA, Police	2014 - 2016	US \$ 0.5 m Local/Donors	- All programs under Action 8 completed by 2016.
Total Cost for the Technology 1				Approx: US \$ 28.5 million	

*- Action number is the corresponding number for each measure listed under Technology 1