



**Regional Workshop for SACEP
Cleaning Up Transport**

Colombo, Sri Lanka
March 22 – 23, 2010

1. Opening Session, March 22

- 1.1 After an opening ceremony to expel the darkness, Ms. Jacintha Tissera (SACEP) welcomed participants and introduced SACEP. This was followed by a welcome from Mr. M.A.R.D. Jayathilake, Secretary, Ministry of Environment & Natural Resources, Sri Lanka
- 1.2 Mr. Mahesh Pradhan (UNEP's Regional Office for Asia-Pacific) then provided a regional perspective, and made clear the connection between this workshop and other initiatives and meetings (for example EANET, Male Declaration etc). He also raised the issues of urban pollution, trans-boundary pollution, health impacts and the co-benefit approach.
- 1.3 Mr. W.K. Rathnadeera (SACEP) introduced the workshop and the agenda (Appendix 1).
- 1.4 Mrs. Vered Ehsani (UNEP's Transport Unit) described the current trends to more energy and space intensive transport options, and their various impacts on health, environment and mobility. After stressing that cleaning up fuels and vehicles, although important, is not enough, she outlined the various aspects of cleaner transport and suggested that we have a broader vision of the kind of urban centres we want to create – cities that are people-centred not car-centred. This introduced the next session of the workshop: 'shift and avoid'.

2. Shift & Avoid

- 2.1 A short video clip highlighted the challenges of cycling in the city when proper infrastructure is not in place.
- 2.2 Mrs. Anumita Roychowdhury (CSE India) gave a presentation on public transport, non-motorised transport and safety. After highlighting air quality trends and health impacts, she then outlined the positive health benefits from air quality management, but warned of second generation threats that are emerging due to the explosive increase in vehicles. Asian cities are more dense, more walkable, have high public transport usage and have a greater diversity of transport modes than European cities. We need to protect these advantages. She suggested ways that this could be done, and urged greater protection for zero-emission transport modes: walking, bicycles, rickshaws, bus-bike integration etc.
- 2.3 Ms. Joe Bailey (CAI-Asia) described a walkability survey done in Colombo. Volunteers walked an assigned route and gave personal assessments, took photos, and interviewed pedestrians and government agencies. The survey noted how sidewalks are 'invaded' for other usages (garbage, parking, vendors), and recommended: long term planning for road development; create a platform to coordinate projects of various government agencies; expand pilot projects on bike lanes; create buffer zone between highways and sidewalks; improve access for disabled persons; and provide driver education on road use ethics.
- 2.4 During the discussion session, the need to value walking and other traditional transport means was stressed, as well as the importance of multi-modal integration. Countries should consider creating a platform for conversation between agencies to allow for integration of different transport means (common ticketing systems, infrastructure etc) and to encourage improvement in optimal performance of each 'sub-system'.

3. Clean fuels & vehicles overview

- 3.1 Mrs. Vered Ehsani (UNEP) described the systems approach to clean fuels and vehicles, emphasising that both clean fuels and efficient, clean technology vehicles are required for optimum emission reductions. She introduced the Partnership for Clean Fuels and Vehicles (PCFV), a programme of UNEP's Transport Unit, and outlined PCFV's campaigns: eliminating lead from fuel; reducing fuel Sulphur levels; promoting clean vehicle technologies and standards; and developing improved fuel efficiency policies.
 - 3.2 After introducing the Clean Air Initiative for Asian Cities (CAI-Asia), Mr. Mike Co presented the challenges and opportunities for promoting cleaner fuels and vehicles. One of the greatest challenges is the explosive growth in private vehicle use in Asia, which will reverse the progress achieved in improving urban air quality and thus lead to related health impacts. He then suggested possible components of a road map for cleaner transport, including: transport planning and demand management; promotion of public and non-motorised transport; cleaner fuels and vehicles; development of a strict time-line of activities.
 - 3.3 The link between dirty fuels, Black Carbon and climate change was emphasised by Dr. Maheswar Rupakh (UNEP's Regional Resource Centre for Asia-Pacific), thus highlighting the co-benefits of cleaner transport and climate change (in addition to health, mobility etc mentioned by previous presenters). Fuel with high Sulphur levels has higher levels of Black Carbon, which absorbs heat from above (unlike CO₂, which traps heat from below) and darkens snow so it doesn't reflect heat but absorbs it. Although relatively short lived, Black Carbon is 2,000 more potent than CO₂ as a 'greenhouse gas', and the transport contribution to Black Carbon emissions is significant. Conversely, a reduction in Black Carbon could result in immediate climate benefits in a short period.
 - 3.4 In discussing fuel efficiency, Anumita Roychowdhury mentioned that Indian vehicles are mostly small, light cars with small engines. However this advantage could be eroded if strict efficiency standards aren't in place: as people get richer, there is a shift to bigger vehicles, and more vehicles. Voluntary targets don't work. We should learn from existing programmes and regularly update and change the regulations to reflect the market. She emphasised that we must avoid trade-off between emissions and efficiency: diesel may be better in efficiency / CO₂, but can be worse in other emissions (NO_x, PM, toxics) if we don't have low Sulphur diesel and clean vehicle technology. Fuel economy standards should also be developed for 2-wheelers (Taiwan is the only country with one) and heavy duty vehicles (Japan regulates fuel economy of buses and trucks).
4. Moving towards cleaner transport
 - 4.1 Dr D.S. Jayaweera (Ministry of Finance & Planning, Sri Lanka) discussed the Sri Lanka case as the country moves towards cleaner fuels and a more efficient vehicle fleet. After providing detailed statistics on the country's vehicle fleet, including annual vehicle mileage and fuel consumption of different vehicle categories, he highlighted the various strategies Sri Lanka was using, including: tighter emission standards; tax reform to promote cleaner vehicles; converting 3-wheelers to LPG/CNG/electric; and the construction of a refinery that can produce Euro IV diesel by 2012. Colombo is also looking at developing a Bus Rapid Transport network.
 - 4.2 Dr. Rashid Hasan (Ministry of Environment & Forest, India) presented the roadmap of Sulphur phase-down in India. After reviewing the impacts from higher Sulphur levels on health, environment and vehicles, he described the vehicle profile of the country. An Auto Fuel Policy was approved in 2003, which looked at fuel quality, automobile technologies and monitoring. There are two parallel roadmaps for the adoption of Euro standards: one for the country as a whole, and another for the mega-cities that face serious pollution problems.
 - 4.3 Mr. Quazi Hashmi (Department of Environment, Bangladesh) described the phase-out of 2-stroke, 3-wheelers in Dhaka. Initially, the government stopped registering them, then increased the duty dramatically, thus encouraging phase out. There was a lot of stakeholder involvement to avoid conflict and disruption. This had to be handled well, as a lot of people's livelihoods were involved, and the 3-wheelers are an important

mode of transport. To promote the 4-stroke 3-wheelers, the duty was significantly reduced for 4-stroke, CNG 3-wheelers. Mechanics and drivers received training in better maintenance to further decrease emissions. Since phase-out, there has been a dramatic decline in particulate matter.

- 4.4 Mr. Mike Co presented the Clean Fleet Management Toolkit. This practical, easy to use tool can assist government agencies and private companies to reflect on the various options to clean up their vehicle fleets, and to develop a strategy to do so. It also allows users to see the great value of cleaning up fuels and vehicles. (To view and use the Toolkit, go to <http://www.unep.org/tnt-unep/toolkit/>).
- 4.5 The first day of the workshop closed with a discussion session.
5. Opening session, March 23
 - 5.1 A brief summary was given, highlighting the topics and lessons learned from the first day. The discussion groups were introduced.
6. What next: Discussion groups
 - 6.1 The participants were divided into 2 groups: countries with high Sulphur levels and those with lower (below 500ppm) Sulphur levels.
 - 6.2 Each group was asked to cover a number of topics, particularly highlighting the main transport initiatives and challenges in each country, and devise a list of recommendations. See Appendix 2 for the summary of the country profiles.
7. Workshop recommendation
 - 7.1 Each group gave a brief presentation on the recommendations that were generated, based on the input from the previous day.
 - 7.2 There was a plenary discussion, leading to the eventual approval of a consolidated list of recommendations (see Appendix 3), to be forward to SACEP's Ministerial Meeting.
 - 7.3 All participants were thanked for their lively and informative participation, and the workshop was officially closed.

APPENDIX 1: Agenda

22nd March 2010	
Opening Session	
9:00 – 9:05	Welcoming address: SACEP
9:05 – 9:10	Welcoming address: Ministry of Environment & Natural Resources, Sri Lanka
9:10 – 9:20	Regional perspective (Mahesh Pradhan, ROAP)
9:20 – 9:30	Introduction to the workshop (W.K. Rathnadeera, SACEP)
9:30 – 9:45	Cleaner Transport: Clean-Shift-Avoid (Vered Ehsani, UNEP)
Shift & Avoid	
9:45 – 9:50	Cycling video clip
9:50 – 10:10	Public transport, non-motorised transport & safety (Anumita Roychowdhury, CSE India)
10:10 – 10:25	To Walk or Not to Walk (Joy Bailey, CAI-Asia)
10:25 – 10:30	Questions, answers & discussion
10:30 – 11:00	Tea Break
Clean Fuel and Vehicles Overview	
11:00 – 11:20	Clean Fuels and Vehicles: A systems approach (Vered Ehsani, UNEP)
11:20 – 11:40	Designing a Road Map for Cleaner Transport: The challenges and opportunities for promoting cleaner fuels and vehicles (Mike Co, CAI-Asia)
11:40 – 12:00	Dirty fuels, Black Carbon & climate change (Dr. Maheswar Rupakheti, RRC.AP)
12:00 – 12:20	Fuel Efficiency (Anumita Roychowdhury, CSE India)
12:20 – 12:30	Questions, answers & discussion
12:30 – 14:00	Lunch
Moving Towards Cleaner Transport	
14:00 – 14:20	Cleaner fuels and a more efficient vehicle fleet for Sri Lanka (Dr D.S. Jayaweera, Ministry of Finance & Planning)
14:20 – 14:40	Roadmap of Sulphur reduction in India (Dr Rashid Hasan, Ministry of Environment & Forest)
14:40 – 15:00	Bangladesh Case Study (Quazi Hashmi, Department of Environment)
15:00 – 15:40	The Clean Fleet Management Toolkit: A quick training (Mike Co, CAI-Asia)
15:40 – 16:00	Questions, answers & discussion
16:00	Tea Break
Close of Day 1	

23rd March 2010	
Opening Session	
9:00 – 9:10	Summary of Day 1 & Introduction to Discussion Groups
What Next: Discussion Groups	
9:10 – 10:30	<p>Group 1: High Sulphur Countries</p> <ul style="list-style-type: none"> • <i>Policy & programme implications for introducing low Sulphur fuel</i> • <i>National level follow-up for developing a clean fuels road map</i> • <i>Financing options</i> • <i>Regional initiatives needed to support national efforts to clean up transport</i> • <i>Regional recommendations for SACEP</i> <p>Group 2: Lower Sulphur Countries</p> <ul style="list-style-type: none"> • <i>Policy & programme implications for introducing cleaner transport</i> • <i>National level follow-up for developing cleaner transport</i> • <i>Financing options</i> • <i>Regional initiatives needed to support national efforts to clean up transport</i> • <i>Regional recommendations for SACEP</i>
10:30 – 11:00	Tea Break
Workshop Recommendation	
11:00 – 11:30	Group presentations
11:30 – 12:00	Plenary discussion and approval of recommendations
12:00 – 12:10	Closing Remarks
Close of Day 2	
12:30	Lunch

APPENDIX 2: Summary of Country Transport Profiles

The participants were divided into two discussion groups on the second morning of the workshop. The following points were generated during the discussions.

High Sulphur Group: countries with Sulphur levels above 500ppm

Afghanistan

- ✓ There is a need to replace old cars with new: many cars from 70's and 80's
- ✓ Transport plans 2010 – 2015 include banning imports of 'old' cars being discussed (Ministries of Transport, Commerce and Finance)
- ✓ Proposes important standard for oil: currently 50% from Turkmenistan, 20 – 30% from Kazakhstan and 20 – 30% from Iran. Total imports = 5 million tonnes (1.5 tonnes for foreign armies)
- ✓ Challenges: 83% green spaces lost; 30 year war; unpaved roads

Bangladesh

- ✓ High sulphur emissions from coal burning and brick kilns
- ✓ 20 year plan for transport (2004 – 2024) includes: BRT; bus corridors; auto signalling system; limit on imports of cars older than 5 years; Euro 3 buses
- ✓ Currently: 20 year old buses already banned; unleaded since 1997; diesel from Kuwait at 200ppm, from Philippines at 2,500ppm; 80% vehicles in Dhaka run on CNG
- ✓ Refinery produces 2,500ppm and needs upgrading
- ✓ Transit not organised and there is a mix of motorised and non-motorised transport – there needs to be an action plan to organise traffic system
- ✓ Road makes up 7 – 8% land area of Dhaka
- ✓ Footpaths: there are footpaths in Dhaka and other cities, but they are not sufficient and most are occupied by hawkers
- ✓ CASE project has awareness activities included

Sri Lanka

- ✓ Transportation plans to 2020 include BRT system for Colombo and surrounding areas, 4 lane highway being constructed
- ✓ Major development in North and Eastern provinces
- ✓ In Western province, electric railway (metro) being constructed – currently they use diesel train
- ✓ Extension of existing rail throughout country
- ✓ Importation of 2-stroke vehicles already banned, and plan to convert to LPG
- ✓ Flyovers being constructed (8 already done)
- ✓ Euro 4 by 2012
- ✓ Ongoing inspection programme: annually, 5% of vehicles to fail and be removed from fleet
- ✓ Need stricter emission standards for new and in-use vehicles
- ✓ Feasibility study being done for expansion of refineries (originally to be funded by Iran, but now there is a funding problem, although reduction of war expenditures is helping)

- ✓ Need tax policies for cleaner vehicles: diesel has higher taxes; buses lower taxes; vans higher taxes; eco-friendly vehicles lower taxes
- ✓ Proposal: Awareness for people; Clean Air 2015 Action Plan for Sri Lanka; Fuel from plastic & Butanol – straw petrol blend

Lower Sulphur Group: below 500ppm

General Challenges

- ✓ Relaxed or lack of stringent regulations on import of second hand vehicles
- ✓ Cross subsidy of fuels
- ✓ Transport policy needs to be implemented and constantly revisited according to current situation
- ✓ Lack of emission standards
- ✓ Need to tighten the regulation on emission standards and fuel quality, plus more awareness and education
- ✓ Process of converting into CNG
- ✓ Timely availability of Euro III and IV
- ✓ Non-uniformity of Euro standard in Indian metro cities
- ✓ Upgrading of refineries
- ✓ Ensure fuel efficiency goal does not compromise decreasing emissions (ex increase use of diesel engines, but using dirty diesel with high particulate matter)
- ✓ Lack of public transport
- ✓ Investments and market-based instruments
- ✓ Old vehicle fleets

Plans & Policies:

Maldives

- ✓ The Transport Authority plans to cap the number of motorbikes allowed (currently there are 40,000 bikes and 600 cars in Male', which is 2 sq km). Each inhabited island will have a predetermined cap, to restrict the number of motor vehicles
- ✓ There is a good plan for public transport for Male', however it has not been implemented due to pressure from taxi drivers
- ✓ There are no emission standards in place, however a road worthiness test is done for vehicles, and includes testing for emission levels

Pakistan

- ✓ Decrease PM in the air – serious health hazard
- ✓ Action plan for CNG
- ✓ Reduce Sulphur content to 0.05 by 2011

Nepal

Sustainable urban transport policy is currently being planned with support from the Asian Development Bank. The project will likely start in July 2010 and will include:

- ✓ Improvement of infrastructure (cycle path, footpaths etc)
- ✓ Setting route permits for different vehicles
- ✓ Revise Euro standard I to Euro II
- ✓ Change existing mechanism of enforcement

Bhutan

- ✓ Expansion / promotion of rural and urban transportation
- ✓ Promotion of non-motorised transport: Walking is widely practiced in both urban and rural areas. Bicycling is not as popular, although some people are taking up mountain biking as a sport. The Transport Policy supports non-motorized transport in Bhutan
- ✓ Strict implementation of emission standard: Emission standards are already in place. Motor emission tests are conducted on a yearly basis for private vehicles and on half yearly basis for commercial vehicles (buses, taxis and trucks)

India

- ✓ Specific auto fuel policy and urban transport policy
- ✓ Strict ambient quality
- ✓ National action plan and several national level programmes and policies from three different ministries for sustainable transport system
- ✓ Working on post-2010 emission standard road map

APPENDIX 3: Recommendations

1. Promote clean fuels, vehicles and transport systems within SACEP region:
 - ✓ The ultimate goal for the region to be 10ppm Sulphur in fuel, with the intermediary goal of 50ppm Sulphur;
 - ✓ Each country to develop a road map, with a timeframe, on the necessary steps to achieve these goals, including refinery upgrades (where appropriate), and changes in regulations governing fuel quality, emission standards and vehicle fuel economy etc;
 - ✓ Each country to develop a fiscal strategy, which could include public-private partnerships, Clean Development Mechanisms and other financing means, and would include differential tax systems and other tools to promote clean fuels and vehicles;
 - ✓ Each country to ensure that all policies, programmes and taxes are harmonised to: eliminate negative signals that promote dirtier fuel and vehicles; provide the right message towards cleaner transport options; avoid trade-offs between efficiency and emissions (for example, in the case of diesel which is more efficient than petrol but could potentially produce more emissions if it is high Sulphur); include facilities and funds for non-motorised transport (walking, biking etc) which is an integral part of the transport system;
 - ✓ Each country to develop a holistic transport policy (including fuels, vehicles, and infrastructure for public and non-motorised transport), with a platform for coordinating the different government departments and agencies that are involved in transport or in issues that impact transport;
 - ✓ SACEP countries to eventually harmonise fuel and vehicle standards across the region;
2. Each country to develop a policy, or update an existing policy, on the importation of second hand vehicles, ensuring that the vehicle fleet within the country meets ever-tightening standards with regards to age and / or emissions, fuel efficiency etc;
3. Each country to have an inspection programme linked to emission standards of in-country vehicles, as well as ensuring that imported vehicles meet certain requirements (based on age and / or technology, such as catalytic converters etc);
4. Each country to be encouraged to initiate awareness raising for public support of clean transport initiatives;
5. SACEP to create platforms for technical assistance and capacity building between countries, through technical meetings in which countries can share best practices and advances in research and development, thus contributing to regional advancement as well as development and adoption of new fuel and vehicle technologies;
6. Transportation infrastructure and systems should be about people. Therefore each country to ensure that all transport and road related projects must include funds and space to provide facilities and infrastructure for non-motorised transport (sidewalks, protected bike lanes, bicycle rickshaw lanes etc), as recommended by UNEP's Share the Road programme.