

CHAPTER 4:

Action Plan

A multisector action plan needs to be developed as a road map for GhG reduction and co-benefit improvements on a regional—emerging Asia—level and for each individual country and city. The action plan presented in Table 5 can guide the individual countries and cities, but they have to ensure that their action plans reflect their particular situation.

The following action plans, as previously discussed, are presented below:

- (i) **Improve access to goods and services through an integrated urban plan.** The greatest GhG mitigation can be achieved in the medium to long term through linking urban development with transportation planning to improve access to goods and services while minimizing the need to travel. Telecommunications can have an important role to play in reducing travel.
- (ii) **Reduce the fuel consumed per passenger- or freight-kilometer traveled through modal shift.** This is the component that can generate the largest GhG mitigation in the medium term. It involves modal shift, promoted by charging the true cost of externalities such as congestion, pollution, climate change, and use of public infrastructure—roads and parking—to the use of private motorized transportation (cars and motorcycles) and providing efficient mass-transit and NMT.
- (iii) **Establish and implement fuel efficiency standards for new vehicles.** Energy efficiency standards must be implemented throughout emerging Asia for all forms of motorized transport.
- (iv) **Massively increase the use of GhG-friendly biofuels for on-road transport.** Changing to fuels that have a lower carbon footprint—on an LCA basis—in sufficient quantities would have a major impact on GhG emissions from on-road transport.
- (v) **Improve fuel efficiency in existing vehicles.** Improving the maintenance condition of in-use vehicles (in terms of quality and frequency) can improve in the short term both their global and local emissions.

These action plans must be updated on a regular, periodic basis as part of a continually improving multifaceted process that respects the social and economic differences between countries and cities but maintains regional congruence and consistency. To support this process, an institutional mechanism should be established in each country and city to discuss, evaluate, and apply an action plan to address GhG emissions.

Similarly, members of the international development community should formulate their own action plan to outline steps they will take to assist Asian countries and cities to move away from the current mobility paradigm and replace it with one that takes into account the impact of transport on climate change.

Table 5: Action Plan for GhG Reduction and Co-benefit Improvements

Effectiveness	Institutional Development	Investment and Financing	Operation
<p>A. Improve access to goods and services through an integrated urban plan</p> <p>Most of these actions will generate visible results in GhG mitigation in the medium to long term.</p> <p>The short-term targets of capacity and awareness building and institutional integration and reinforcement should be identifiable within a political time frame.</p> <p>The international development community, together with national governments, is key in catalyzing climate-change-friendly, sustainable improvement of urban and transport development programs at the state, provincial, and metropolitan-area levels.</p> <p>The international development community has an important role in outreach to governments and other stakeholders to help them design and formulate fuel efficiency policy.</p>	<ul style="list-style-type: none"> Support the formulation of metropolitan area development strategies that integrate all cities or municipalities within the area. Promote via training and best-practice definition the development of a long-term urban and transport structure plan for each major Asian metropolitan area and ensure that all short- and medium-term projects are meeting these long-term goals. Strengthen the linkages at city and municipal levels between urban planning, transport planning, traffic management, and enforcement to minimize functional and jurisdictional impediments to policy integration. Charge the externalities of private motorized transport to improve NMT and mass transport by actively promoting private transport demand restraint via spatial and time-variant pricing and nonfinancial measures. Promote the involvement of local community groups and NGOs in the strategy design and project implementation via well-informed, opportune consultation. Promote the application of consistent sustainable development indicators at the national, state, and provincial levels to evaluate the urban and transport progress at the city and municipal levels toward meeting these long-term goals for each major Asian metropolitan area. Promote GhG reduction as a <i>sine qua non</i> basis for all traffic management and urban and transport development projects. Promote the use of telecommunications to reduce the need to travel. 	<ul style="list-style-type: none"> Actively promote investment in infrastructure, safety and security, and capacity and awareness building that develops NMT via a network of segregated routes and integrated areas in the urban environment. Promote private sector investment that is consistent with the strategic framework. Provide capacity and awareness building to the private sector. Promote multiagency financing packages and programmatic lending to cities where different administrative areas need to collaborate within the same transport development program. Ensure that all bank lending for urban development and road infrastructure projects has a long-term energy efficiency improvement component. 	<ul style="list-style-type: none"> Promote private sector operation of public transport. Provide technical assistance in the design of franchised, route-based urban transport concession contracts and controlling regulations. Ensure that all urban development that is a high-trip generator (such as shopping malls) has optimized public transport access, with special attention to the modal interchanges (e.g., private to public). Evaluate bank investment projects based on how they improve access and mobility of persons to goods and services, not based on traffic improvements. Strengthen sustainable urban development and transport planning training institutions and promote the retention of skilled professionals in evangelistic centers of excellence.

GhG = greenhouse gas; NGO = nongovernment organization; NMT = nonmotorized transport.
Source: Author.

Effectiveness	Institutional Development	Investment and Financing	Operation
<p>B. Reduce the fuel consumed per passenger- or freight-kilometer traveled through modal shift</p> <p>These actions can generate visible results in GhG mitigation in the short to medium term. The deployment of BRT is achievable within a shorter political time frame.</p> <p>The international development community, together with national, state, and provincial governments, is key in catalyzing climate change-friendly, sustainable improvement of urban and transport development programs at the metropolitan area and city or municipal levels.</p>	<p>As above plus the following:</p> <ul style="list-style-type: none"> Promote mass transport developments that work toward meeting a goal of improved door-to-door connectivity. Stand-alone routes will never substantially change the number of vehicles per 1,000 population. Promote collaboration among different administrative functions within the metropolitan area to create transport systems that integrate and cross-administrative barriers. Provide education and guidelines to ensure that all local agencies involved (land transport, urban development, traffic police, etc.) work toward a common vision and goal. Develop technical expertise at the local levels of government to facilitate improved transport integration within a citywide and regional development framework, particularly for NMT-to-mass transport interfaces. Promote best practice development. Assign responsibility at the highest level for traffic safety, safety and security in all mass transport, and associated pedestrian and NMT development. Strengthen the focus for access of the urban poor and mobility-impaired to transportation systems. Reinforce traffic management and enforcement skills at the local level. Develop metropolitan area-wide policies that favor mass transport over private transport. 	<ul style="list-style-type: none"> Focus and give preference to investments in transport programs that reduce the fuel consumed per passenger- or freight-kilometer traveled. Procure investment for mass transit projects and initiate policies that promote modal shift from private personal transport. Seriously consider low-investment options that allow extensive coverage such as BRT operating on segregated roadways. Consider public-private partnerships where the infrastructure investment for mass transit is provided by the government and the rolling stock is operated by well-regulated, franchised private operators. A franchised bus route can generate notably fewer GhG emissions (direct and indirect) than free competition between individual bus operators. Most urban transport systems can benefit from private operation. Place emphasis on sufficient investments for pedestrians and NMT in all urban transport and development programs. 	<ul style="list-style-type: none"> Emphasize the development of financially sustainable transport systems that allow the system operator to invest in growth and continual system maintenance and rolling stock replacement. To enable efficient and sustainable transport operations, it is desirable that subsidies to meet other sector objectives (health care, education, etc.) be financed directly through the budgets of these other sectors. Since fares must be affordable, a well-regulated mass transport system may require the franchised operator to internally subsidize a less profitable low-cost service with a higher fare service on the same route (for example, by operating seat-only A/C and higher passenger density non-A/C buses on the same route at regulated frequencies).

A/C = air-conditioned; BRT = bus rapid transit; GhG = greenhouse gas; NMT = nonmotorized transport.
 Source: Author.

Effectiveness	Institutional Development	Investment and Financing	Operation
<p>C. Establish and implement fuel efficiency standards for new vehicles</p> <p>These actions can generate noticeable results in GhG mitigation in the medium term. While changes in standards, if implemented, can bring about considerable changes to fuel efficiency, their impact in overall results depends on the speed of incorporation into the in-use vehicle fleet.</p> <p>The international development community, together with national governments, is key in catalyzing climate-change-friendly, sustainable improvement of fuels and vehicle technology.</p> <p>An integrated approach to policy development is needed in all areas of the transport sector, while clear actions are delineated for the various functional players.</p> <p>For example, promoting biofuels may increase fuel consumption but reduce GhG emissions. However, this may be ineffective if the vehicles on the market are not compatible with these biofuels.</p>	<ul style="list-style-type: none"> Promote the evaluation and open discussion of the health cost associated with automotive emissions and the participation of private and mass transport in criteria- and GhG-emissions inventories at the local—metropolitan area—and regional levels. Promote the development of future motorization scenarios based on population and urban growth and determine their expected impact on criteria and GhG emissions. Provide technical assistance with capacity and awareness building while realizing the long lead times involved in new vehicle penetration. Develop a national technological automotive road map that defines and regulates the availability of no-lead and low-sulfur fuels, together with advanced engine and vehicle technology, to mitigate the health cost and climate change impacts of road transportation. Establish energy efficiency and vehicle emissions standards, together with their associated fuel standards, reducing the technology implementation gap for vehicles and fuels, with a goal of reaching current “worldwide” standards in the shortest feasible time frame (closing the gap). Promote research and development in the future use of non-carbon fuels (e.g., hydrogen). Assume a leadership position for 2- and 3-wheel vehicles. Promote the involvement of local community groups and NGOs in the strategy design and road-map implementation via well-informed, opportune consultation. 	<ul style="list-style-type: none"> Promote an investment strategy that allows the implementation of these standards while reinforcing the international competitiveness of private sector stakeholders. Promote the accelerated substitution of old vehicles in the fleet with new cleaner, higher-efficiency vehicles. 	<ul style="list-style-type: none"> Promote the involvement of local community groups and NGOs in the strategy design and road-map implementation via well-informed, opportune consultation on the future use of non-carbon fuels (e.g., hydrogen). Private enterprise, refineries, engine and vehicle manufacturers should take action. Support the formulation of energy efficiency and vehicle emissions standards and their accelerated implementation. Promote the accelerated replacement of old vehicles in the fleet with new cleaner, more efficient vehicles. Optimize the international competitiveness of refineries and manufacturing plants in Asia. Promote professional vehicle maintenance through training, parts availability, and diagnostics.

GhG = greenhouse gas; NGO = nongovernment organization.
Source: Author.

Effectiveness	Institutional Development	Investment and Financing	Operation
<p>D. Massively increase the use of GhG-friendly biofuels for on-road transport</p> <p>These actions can generate noticeable results in GhG mitigation in the long term.</p> <p>The short-term targets of capacity and awareness building should be identified.</p> <p>The international development community, together with national governments, is key in creating a harmonized environment that promotes development and large-scale production of biofuels within an evolving framework of diverse feedstocks and processes.</p> <p>In the shorter term, widespread introduction of low levels of biofuel components (typically 5–10% by volume) into existing fuel grades can deliver GhG reductions in all vehicles. However, not all biofuel components have the same performance in reducing GhGs; therefore, any policy that promotes/requires their use should ensure that the biofuel components used are assessed in direct relation to their actual GhG reduction performance. Assessment of individual biocomponent performance should include the agricultural practices associated with the production of feedstocks, the production processes used in manufacturing the fuels, and the product end use.</p>	<ul style="list-style-type: none"> Promote, via training and best-practice definition, the development of a long-term policy that creates a regional framework and incentives GhG-friendly biofuel production for each major Asian economy. Promote the development of regionally harmonized biodiesel quality standards and tariff policies congruent with international developments and standards that stimulate investments in large-scale production and facilitate international trade in biofuels, both within Asia and with markets outside the region. Establish the appropriate legal framework at national and state levels to minimize functional and jurisdictional impediments to policy integration. Promote GhG reduction as a <i>sine qua non</i> basis for all biofuels development projects. Define the cost impact to the transport sector for GhG reduction, both external and internal. Having a clear understanding of the options, their costs, and gross reduction in GhGs will help focus the action plan. The impact of policies on food demand, biodiversity impact of agricultural practices, production routes, and prices also needs to be considered. 	<ul style="list-style-type: none"> Actively promote the research and development of innovative feedstocks and processes, including integrated refining schemes. Promote private sector investment that is consistent with the strategic framework of providing a substantial substitution for fossil fuels in on-road transport. Provide capacity and awareness building to the private sector. Promote multiagency financing packages and programmatic lending to emerging Asian countries for developing biofuels programs. 	<ul style="list-style-type: none"> Promote private sector operation of all phases of biofuel feedstock and production processes. Evaluate bank investment projects based on how they contribute to a mitigation of GhG emissions. Strengthen sustainable fuels training institutions and promote the retention of skilled professionals in evangelistic centers of excellence. Strengthen biofuels and raw materials trading on regional and world markets.

GhG = greenhouse gas.

Source: Author.

Effectiveness	Institutional Development	Investment and Financing	Operation
<p>E. Improve fuel efficiency in existing vehicles</p> <p>These actions can generate noticeable results in GhG mitigation in the short term.</p> <p>The international development community, together with national governments, is key in catalyzing the political willpower required to get these programs off the ground.</p>	<ul style="list-style-type: none"> Promote extensive capacity and awareness building on the health cost and additional fuel costs associated with inadequately tuned and repaired vehicles. Promote and incentivize the political will-power in local—city and metropolitan area—governments to establish and effectively enforce in-use vehicle emissions standards. Establish the appropriate legal framework that allows sanctions to be applied for failure to correctly perform the mandatory testing protocols and strengthen the linkages at city and municipal levels between environment and traffic enforcement to minimize functional and jurisdictional impediments to effective implementation. Develop and establish a mandatory and well-enforced inspection and certification program focused on improving the emissions and fuel economy performance of older and intensively used vehicles in the fleet. Develop priority programs for municipal and urban bus fleets. Evaluate the inclusion of mandatory vehicle fitness and safety inspection on older and intensively used vehicles in the fleet to directly promote increased road safety. Evaluate retrofit as an option to achieve improved emissions and fuel economy performance from existing heavy vehicles at a lower cost and in a shorter time frame than would be achievable through vehicle replacement. 	<ul style="list-style-type: none"> Provide technical assistance to the public sector in designing, structuring, and implementing robust, mandatory vehicle fitness and safety inspection systems. Provide capacity and awareness building to the private sector. Promote multiagency financing packages and programmatic lending to emerging Asian countries for the implementation of programs designed to reduce the fuel consumption of in-use vehicles. 	<ul style="list-style-type: none"> Promote improved vehicle maintenance through training, parts availability, and diagnostics.

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Source: Author.