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REPORT OF THE STAP BRAINSTORMING ON TRANSPORT

(Prepared by the Scientific and Technical Advisory Panel)

Report of the STAP Brainstorming on Transport

**March 25-26, 2002
UNEP Headquarters, Nairobi, Kenya**

*Prepared by
The Scientific and Technical Advisory Panel (STAP)
of the Global Environment Facility (GEF)*

**STAP Secretariat
United Nations Environment Programme**

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Preface

It is a pleasure to present the final report of the STAP Brainstorming on Transport which was convened at UNEP Headquarters, Nairobi, Kenya from March 25-26, 2002. STAP, on behalf of the GEF, would like to acknowledge all the experts who participated in the workshop and contributed their knowledge and experience freely. ~~STAP is very appreciative on the “China Efficient Industrial Boiler Project”. The Selective Review was undertaken as an integral part of the Programme Studies co-ordinated by the Monitoring and Evaluation Unit of the GEF Secretariat.~~

This report was prepared by Dr. Stephen Karekezi and the STAP Secretariat.

Madhav Gadgil
STAP Chairman

Executive Summary

Background

The GEF Transport portfolio (Operation Program, OP#11) is currently dominated by technology-oriented options. Major initiatives promoting fuel cell technology and electric/hybrid vehicles have been launched. Close to 70% of the full projects in OP#11 are promoting either fuel cells or hybrid electric vehicles. STAP has expressed concern over the limited number of GEF initiatives aimed at promoting non-technology options that can lead to significant modal shifts to more efficient and less polluting forms of public and freight city transport (i.e. from personal motorized transport to mass transit, buses, bicycles and walking).

The aim of the Brainstorming Session was to recommend a set of non-technology priority options that could constitute one of the key focal themes of the evolving GEF transport portfolio. Emphasis was placed on options that have demonstrated verifiable successes and that are suitable for deployment in developing countries.

While the recommendations made from each region reflected its unique characteristics (and need to be taken account of in future initiatives), there was a general consensus that the following options are likely to be the most beneficial and deserve special attention from proponents of future GEF sustainable transport initiatives:

- Public Rapid Transit (PRT) which encompasses Bus Rapid Transit (BRT), Light Rail Transit (LRT) and Trolley Electric Buses (Tbuses). The majority of the transport experts at the Brainstorming expressed preference for the Bus Rapid Transit (BRT) option (preferably with buses running on “cleaner” fuels such as low-sulfur diesel, LPG and CNG).
- Traffic Demand Management (TDM) which includes parking measures, traffic cells, areas licensing (restricted zones) and congestion pricing.
- Non-Motorized Transport (NMT) which encompasses physically-separate NMT lanes and networks, traffic calming, strengthening NMT manufacturing and/or maintenance enterprises and improving NMT vehicles.
- Land-Use Planning (LUP) through regulatory measures (zoning laws) and judicious location of new public facilities such as schools, hospitals, playgrounds, shopping centers, industrial areas and police stations (i.e. place public facilities in transit-friendly locations).

In addition, the importance of a number of crosscutting issues were highlighted which should be addressed irrespective of the option that is being promoted:

- Collection and dissemination of data and information on options and respective impact.
- Participation, promotion, social marketing and awareness creation.
- Emphasis on the provision of long-term financing for independent research and advocacy sustainable transport groups and agencies that can engender and sustain the emerging interest in non-technology sustainable transport projects. Some form of endowment funding would be

appropriate particularly in a region such as Africa where the need for capacity building and institutional support is important.

It is also recommended that the criteria for the prioritization of GEF sustainable transport initiatives would differ with location and type of the option that is being promoted. In this regard, emphasis could be placed on smaller towns and secondary urban centers where vested interests and barriers are not so daunting. By initially concentrating on smaller towns and secondary urban centers, the GEF could generate the results and impacts that could engender the momentum needed to face the enormous transport and GHGEs problems that bedevil most of the primary urban centers of the developing world.

It was observed that the dissemination of success stories is still inadequate. It is therefore being recommended that GEF consider the possibility of organizing regional workshops (starting with Africa which currently has no full OP#11 projects) to encourage the adoption of the aforementioned proven and successful non-technology measures to a wider audience. Establishment of regional forums can provide a convenient institutional framework for the organization of regional workshops and ensure effective implementation of the requisite follow-up activities.

Bringing together key stakeholders in the urban transport sub-sector (e.g. municipalities, transport authorities, concerned citizen groups, researchers, motorized and non-motorized vehicle assemblers and vendors, bus operators, concerned government agencies and private sector entities), the regional forums can provide an effective vehicle for engendering wider awareness of GEF sustainable transport initiatives. In addition, the forums can provide the framework for identification of priority urban areas that are suitable for GEF interventions and initiation of appropriate GEF sustainable transport projects.

In addition, the meeting recommended that, in the near term, the GEF initiate smaller barrier removal/planning/demonstration projects (e.g. in the framework of its MSP portfolio) that would lay the groundwork for larger private sector or government investments in BRT, NMT, TDM and LUP. Examples of such initiatives include projects that support small and medium scale NMT enterprises in the developing world. This approach is likely to result in more effective use of the available GEF funds, especially in smaller and medium-sized cities.

Because of the time limitations, the Meeting did not address the freight transport issue. Participants, however, noted its importance and stressed the need for further attention on this issue. It may be the subject of discussion for the next STAP.

Next Steps

The Meeting recommended that, in the near term, the GEF and its partners undertake the following steps:

- Build on the enthusiasm and commitment demonstrated at the Brainstorming to establish a network on non-technology options for promoting sustainable transport. In the first instance, the network can be in the form of a low-cost electronic bulleting board and web-site. Should there be greater interest, a more formal network can be established.
- Organization of regional workshops (which can, preferably, provide the platform for initiating the aforementioned regional forums) that encourage the dissemination of the growing number of GEF non-technology sustainable transport initiatives and encourage

participation in GEF Transport OP11. With very few ongoing and planned transport projects, the Meeting recommended that Africa be given the first priority in the organization of a Regional Workshop on Sustainable Transport.

- Preparation of more detailed GEF guidance for the development of non-technology sustainable transport projects. Findings of this Brainstorming Meeting can provide essential building blocks for the preparation of the detailed guidance. One important recommendation that the detailed guidance could take on board is the suggestion that, in the near term, the GEF initiate smaller barrier removal/planning/demonstration projects (e.g. in the framework of its MSP portfolio). These projects would lay the groundwork for larger private sector or government investments in BRT, NMT, TDM and LUP. Examples of such initiatives include projects that support to small and medium scale NMT enterprises in the developing world. This approach is likely to result in more effective use of the available GEF funds, especially in smaller and medium-sized cities.

1.0 Central Issue

The GEF Transport portfolio (Operational Program, OP#11) is currently dominated by technology-oriented options. Major initiatives promoting fuel cell technology and electric/hybrid vehicles have been launched. Close to 70% of the full projects in OP11 are promoting either fuel cells or hybrid electric vehicles. STAP has expressed concern over the limited number of GEF initiatives aimed at promoting non-technology options that can lead to significant modal shifts to more efficient and less polluting forms of public and freight city transport (i.e. from personal motorized transport to mass transit, buses, bicycles and walking). Other key GEF stakeholders also share this view.

2.0 Background

A number of studies indicate that non-technology options for stimulating modal shifts can ensure short term as well as long-term abatement of GHGs emissions from urban transport systems at relatively low cost. Examples include integrated urban, land use and transportation planning; increased reliance on bus systems; traffic management and avoidance; and, fuel/vehicle tax/import duty policies. While it is somewhat intuitively straightforward to see how such non-technology options can lead to long-term modal shifts to low-GHGs urban transport systems, it is less clear which set of options should be given priority in a developing country context. The criteria for the selection of appropriate options and the ideal sequence of implementation of identified options are also largely unknown.

3.0 Objective of Brainstorming Session

The aim of the Brainstorming Session was to recommend a set of non-technology priority options that could constitute one of the key focal themes of the evolving GEF transport portfolio. Emphasis was placed on options that have demonstrated verifiable successes and that are suitable for deployment in developing countries.

4.0 Participants

The Brainstorming Session involved 35 participants drawn from 19 countries. It included STAP members; representatives of key GEF agencies (GEF Sec, UNDP, UNEP and World Bank); invited experts from Habitat, IEA, ITDP; media and private sector representatives; urban/city authorities representatives; and, key experts from other relevant institutions (universities and NGOs) in both developed and developing countries (see Annex 1).

5.0 Sequence of Brainstorming Session Activities

The Brainstorming session was organized in the fashion of an inverted triangle with latter sessions becoming increasingly focused on specific issues of high interest to the Meeting. The first set of overview papers provided a panoramic perspective of the transport sector and re-assessed the rationale for major initiatives on non-technology options for promoting sustainable transport. The next set of case study papers focussed on specific city examples of both successful and unsuccessful sustainable transport initiatives. The case studies presented experiences from Singapore, Mauritius, Gaborone (Botswana) and Quito (Ecuador). The last set of papers concentrated on planned (upstream consultation and pipeline) as well as ongoing (full) projects that are being implemented by the principal constituent members of the Global Environmental Facility (GEF).

The rest of the time was dedicated to Working Group Sessions which were aimed at proposing the most important options for GEF consideration as well as proposing concepts that the GEF might wish to consider launching in the medium term (1-2 years).

The Working Groups were organized by region (Latin America & Caribbean, Africa, Middle East & Asia) with the following set objectives:

- Identify priority options for GEF intervention (if possible, suggest ideal sequence);
- Propose criteria for prioritization;
- Suggest project ideas for possible GEF implementation.

6.0 Background Papers

A number of background papers were presented addressing a number of issues including the most recent Convention guidance on the transport sector, a succinct portfolio review of the GEF Transport OP11 and two technical overview papers by leading international sustainable transport energy experts focusing on the current scientific knowledge on non-technology options for promoting modal shifts to sustainable urban transport systems; alternative scenarios that demonstrate the impact of various non-technology options; description of model case studies of implementation of non-technology options that resulted in significant modal shifts to less polluting forms of urban transport systems and recommendation of a set of priority options for consideration by the GEF. In addition, the papers provided suggestions on criteria that could be used for prioritization of options.

The presentation on the most recent convention guidance included a brief overview of the unfolding climate negotiations and how the negotiations are likely to impact on future sustainable transport initiatives. The paper indicated that a significant proportion of the signatories to the UNFCCC were concerned about the growing emissions from the transport sector and were keen to see active innovative interventions aimed at mitigating GHGs from transportation.

The presentation of the GEF Transport OP#11 underlined the limited attention given to non-technological options and demonstrated that the GEF transport portfolio was largely dominated by advanced technologies such as fuel cells and electric/hybrid vehicles. Advanced technologies accounted for close to 70% of full GEF projects (the percentage in \$value terms is likely to be higher). It was however, indicated that the pipeline and upstream consultation projects demonstrated increased attention to non-technological options but in \$value terms, advanced technologies would most probably continue to dominate the transport portfolio if the current trends are maintained. It was also provided a regional comparative assessment, which showed a disturbing absence of transport activities in the Africa region. In brief, the presentation underlined the case of more projects aimed at promoting non-technological options in the transport portfolio and underline the urgent need for additional transport projects in the Africa region.

Two overview papers: Both overview papers provided compelling evidence for greater GEF investments in Bus Rapid Transit (BRT) systems. A wide range of sustainable transport initiatives, which demonstrated the proven viability of non-technological options were highlighted. In addition to BRT, it was recommended that future GEF activities should concentrate on the following options:

- Traffic Demand Management (TDM) which includes parking measures, traffic cells, areas licensing (restricted zones) and congestion pricing.

- Non-Motorized Transport (NMT) which encompasses physically-separate NMT lanes and networks, traffic calming, strengthening NMT manufacturing and/or maintenance enterprises and improving NMT vehicles.
- Land-Use Planning (LUP) through regulatory measures (zoning laws) and judicious location of new public facilities such as schools, hospitals, playgrounds, shopping centers, industrial areas and police stations (i.e. place public facilities in transit-friendly locations).

The pivotal importance of public participation in all stages of sustainable transport project implementation was also stressed, as it is often the single most important pre-requisite for success.

Using results from an extensive global study on sustainable transport undertaken by the International Energy Agency (IEA), it was demonstrated that the Bus Rapid Transit option is, in almost all cases, the most attractive option for mitigating GHGEs in the urban areas of the developing world.

The comparison of the cost of a fuel cell bus to a regular bus indicated that the cost of few fuel cell buses could finance the establishment of a complete BRT system equipped with clean diesel buses (Table 1). The BRT system would be able to deliver much higher GHGEs savings, not in the future, but in the very near term (2-3 years). Evidence from Latin America indicated that the BRT option was gaining ground and, with GEF support, could account for a larger share of urban transportation, not only in Latin America, but throughout the developing world.

Table 1: Comparison of the Cost of a Fuel Cell Busta Regular Bus

Propulsion technology	Cost per vehicle (US\$)
Diesel	30,000 – 100,000
CleanDiesel/Trolley	100,000-250,000
CNG, LPG bus	150,000 – 350,000
Hybrid electric bus	200,000 – 400,000
Fuel cell bus	1.0 – 1.5 million
Metro rail car	1.7 - 2.4 million

The need for a comprehensive approach to the implementation of sustainable transport projects was also highlighted. Of special importance is the need for a framework that captures the full impact of sustainable transport initiatives. A preliminary framework (to be further developed in conjunction with another leading international transport expert) was presented that captures the full impact of transport initiatives including rebound effects. Known by the acronym ASIF (Activity, modal Share, vehicle fuel Intensity, carbon emissions per unit Fuel type), the framework could provide the basis for comparing and prioritizing the various transport options that the GEF might wish to initiate. It could also provide the basis for developing M&E tools for the transport portfolio.

Papers were also presented on Model Case Examples that demonstrated successful implementation of non-technology options were also presented. Preference was given to case studies from outside the GEF family to ensure that the Brainstorming Session encompasses a wide range of experiences. Two of the papers (Singapore and Quito) provided examples of successful urban transport initiatives that could be emulated by other developing countries. In contrast, the Gaborone and Mauritius case study papers provided examples of conventional responses to transport energy challenges and demonstrated that traditional approaches are unlikely to resolve the growing problems of urban transportation.

The Singapore case study showed that, contrary to conventional wisdom, the sustainable transport system that is now in place in Singapore could be replicated in the other parts of the developing world. A number of transport analysts often claim that the efficient and clean transport system that has been established in Singapore is reflection of the country's unique characteristics, chief among which, is the tradition of strong and effective state involvement. By concentrating on the early years of Singapore transport sector development, it was demonstrated that the country faced similar challenges that bedevil much of the developing world today and used low-cost and low-risk measures to address its transport challenges. Once again, a Bus Rapid Transit (BRT) proved to be the most cost-effectiveness means of addressing the city's transport problems. In the case of Singapore, the BRT was combined with a simple but highly effective area licensing system that limited the use of personal vehicles in the city's central business district. The Brainstorming Session noted that many of the early interventions in the transport system of Singapore could be replicated in the urban areas of the developing world.

The case study paper on Quito once again, confirmed the benefits of the Bus Rapid Transit (BRT) option. In Quito's case, the central artery of the new public transport system relied on electric trolley buses served by conventional BRT feeders. The Quito case study examined in significant detail the complex institutional barriers that had to be overcome to ensure the success of the city's public rapid transit system. It also demonstrated the importance of local expertise (preferably resident in independent transport research centers) that can drive the policy research process and provide the required scientific rationale for sustainable transport interventions.

The Mauritius case study presented the rationale for introducing a relatively high-cost light rail-based public transport system. Complex land ownership questions along major transport arteries combined with a negative public perception of buses appear to place significant barriers to the implementation of BRT system in Mauritius. The relative high cost of light rail, however, indicates that additional reviews may be required before a final decision on the suitability of the light rail option is made. Primarily because of high cost constraints, the Brainstorming Session was not able to arrive at a consensus on the suitability of the light rail option in developing countries.

The Gaborone case study highlighted the potential benefits that non-motorized transport options could deliver to smaller but rapidly growing cities of the developing world. The Gaborone case study also demonstrated the absence of two and three-wheelers in the African urban transport sector – what the transport research community calls the “missing middle”. The paper showed how the “missing middle” could be exploited to ensure that the small but rapidly growing cities of African are placed on a sustainable transport development path.

7.0 Upstream Consultation, Pipeline and Ongoing Projects

The meeting also concentrated on upstream consultation, pipeline, full and ongoing projects that are designed to promote non-technology options for promoting sustainable urban transportation systems. In the upstream consultation project planned for Indonesia, its unique characteristic is the involvement of a group of transport and urban planners, specialists and researchers with extensive experience and contacts in the urban transport sector of Indonesia.

The GEF Implementing Agencies also provided an overview of their respective project pipelines (i.e. full and ongoing projects under implementation). The discussion focused on a global sustainable transport initiative being launched by UNEP; the UNDP non-motorized bicycle project in Gdansk that demonstrated the importance of participation and use of local know-how and expertise; the World Bank showed how the Bank is leveraging its extensive urban transport and clean air initiatives to launch a series of innovative sustainable transport projects in various developing countries.

In brief, the presentations on upstream consultation, pipeline, full and ongoing projects demonstrated that the GEF Implementing Agencies were aware of the need for increased support for non-technology sustainable transport projects and were keen to promote a large number of projects addressing this gap in GEF Transport OP#11.

8.0 Working Groups

As mentioned earlier, the Working Groups were organized by region (Latin America & Caribbean, Africa, Middle East & Asia) with the following set objectives:

- Identify priority options for GEF intervention (if possible, suggest ideal sequence)
- Propose criteria for prioritization
- Suggest project ideas for possible GEF implementation

8.1 Working Group Session on Africa

The Working Group on Africa noted the almost total absence of GEF non-technology transport projects in Africa and underlined the need for increased GEF support for sustainable transport initiatives in the region. To facilitate successful implementation of transport-related initiatives in Africa, the Working Group on Africa considered the following issues to be of central importance:

- *A transport master plan prioritizing the transport options namely public rapid transit (PRT), non-motorized transport (NMT) and traffic demand management (TDM). Near term interventions can, however, be initiated even before a fully-fledged transport master plan is in place;*
- *A harmonized institutional structure that ensures effective coordination of all key stakeholders;*
- *Collection of data on options and impact in form of case studies and targeted research studies;*
- *Financial sustainability: Participants stressed the need for some form of long-term support (preferably in the form of endowment funding) for independent sustainable transport research centers that can further engender and sustain the embryonic interest in sustainable transport.*

The Working Group on Africa also recommended the following priority options for the region:

- (i) **Traffic Demand Management (TDM)** – This would focus on decongesting the CBD, encourage the shift from private to public transport, and improve traffic flow. These objectives would be achieved through the following measures:
- Parking measures
 - Traffic cells
 - Area licensing and congestion pricing
 - Public transport regulation
 - Measures to limit vehicle age
- (ii) **Non-Motorized Transport (NMT)** – The key NMT options for Africa are:
- Popularization of bicycle through the media, scrapping duty on bikes and infrastructure such as bike-lanes and parking bays;
 - Targeting schools to reduce the drop-off and pick-up trips by parents by students using bicycles to and from school, and pedestrian lanes;
 - Strengthening of NMT manufacture and maintenance enterprises.
- (iii) **Public Rapid Transit (PRT)** – Preference to be given to Bus-centric approaches. The measures that would facilitate PRT in Africa include:
- Short-term measures
 - ◆ Rapid boarding, alighting and pre-payment
 - ◆ Provision of proper terminals and bus-stops on all major roads
 - ◆ Re-organising the public transport sector to coordinate all the service providers
 - ◆ Improved customer service and marketing
 - Medium-term measures
 - Segregated bus lanes

In addition, the Working Group Session on Africa identified the following important criteria for prioritization:

- Potential GHGEs savings impact
- Proven track record
- Cost to Government
- Cost to consumer
- Enforcement capacity
- Availability of expertise

8.2 Working Group Session on Latin America

The Working Group on Latin America proposed the following criteria for prioritization of GEF projects on non-technology transport projects:

- (i) Potential GHGEs savings;

- (ii) Level of emphasis placed on improved management of city transport systems that, in a number of cases, can only be characterized as chaotic;
- (iii) Use of existing and proven technologies that can yield significant benefits (e.g. GPS-based computer control systems);
- (iv) The extent to which the proposed initiative would result in real and extensive beneficial changes to the urban transport system;
- (v) The adequacy of planned monitoring and evaluation activities;
- (vi) Whether the proposed project would bring together the different groups of stakeholders in a meaningful way (politicians, transport authorities, operators and of utmost important, the media);
- (vii) Level of citizens' education and participation at every stage of the project. Of particular importance is "consensus building" which should be interpreted as provision of financing to strengthen existing or create groups with a particular interest in sustainable transport issues (environmental, consumer, local communities, neighborhood associations, etc.);
- (viii) Evidence of real and committed political support;
- (ix) Preference given to multi-faceted, multi-purpose projects that are the hallmark of successful sustainable transport projects.

The Working Group on Latin America also recommended a number of activities that GEF should consider including in its non-technology transport portfolio, namely:

- Support to networks that encourage the exchange of expertise, establish information banks on projects and information on the GEF and other sources of funding;
- Regional initiatives that would push replication within countries and between similar-sized cities in different countries;
- Development of a manual for consensus building which would provide concrete guidance on what is citizens' participation in urban transport and how you can make it work for your city;
- Development of local projects components for small-sized cities;
- Activities that would ensure that GEF transport initiatives are better known.

The Latin America Working Group Session also underlined the need for sustainable transport proponents to take account of the following important lessons drawn from world wide project experiences:

- Programs aimed at restricting the use of personal cars should include a major civic education component;

- As a rule, non-physically separated NMT lanes do not work. Emphasis should be placed on the promotion of physically separated NMT networks that include a significant pedestrian component as well as infrastructure such as parking facilities for bikes;
- The need for greater emphasis on citizen's participation, promotion and consensus building. In many developing countries, commuter organizations rarely exist so one needs to reach out to pioneer groups such as environmental clubs, cycling clubs, consumer groups and neighborhood associations;
- On the land use and planning question, the Working Group on Latin America underlined how transportation can influence land use. For example, a well-planned public transport system (such as a bus-way or a network of bicycle and pedestrian routes) can lead to environmentally-sound land development (e.g. mixed commercial and residential development). Targeted research activities that examine how sustainable transport initiatives can lead to improved land-use management could provide an additional rationale for the initiation of a larger number of sustainable transport programs.

8.3 Working Group Session on Middle East & Asia

The Working Group on Asia proposed the following selected criteria that could be used to develop a more comprehensive prioritization framework:

- Most projects should have elements of land use, NMT, TDM, transit – these should at least line up together, be reinforcing;
- On the choice between Bus Rapid Transit (BRT), Light Rail Transit (LRT) and Trolley Buses (Tbuses), the Working Group had no clear preference but recommended that project proponents should be sensitive to context and open to selecting the most optimal choices for the location under consideration. The Group, however, stressed the need for tools that would assist cities decide which way to go;
- With respect to Transport Demand Management (TDM) and Non-Motorized Transport (NMT), the Working Group on Asia emphasized the regulatory penalties associated with TDM (e.g. higher cost parking) should be preceded by the incentives of attractive transit alternatives and NMT facilities;
- On land-use planning, the Working Group stressed the need for long-term planning that should be regularly updated to reflect new initiatives and changes;
- The Working Group on Asia further emphasized that future GEF initiatives in sustainable transport should include major components (implemented in the initial phases of the projects) on the following:
 - ◆ Data collection, which should be prioritized early in a project to ensure that data that is critical to key project decisions, is identified and collected. The collected data would also provide important information for project monitoring and evaluation;
 - ◆ Case studies (good and bad) from other places should be gathered and used as inputs in project formulation;
 - ◆ Involvement of the media in early phases of the project development to ensure public awareness and raise support for solutions;

- ◆ Consultations with stakeholder groups throughout the project development and implementation process – crucial for building support.

The Working Group on Asia suggested the following criteria for prioritization of GEF projects:

- Underlying policy set: Does it align with plans? Is it conducive to success? Suitability of existing incentives/disincentives to public/private transit.
- Properly defined project boundaries: Comprehensive without being too ambitious.
- Financial sustainability of project.
- Poverty alleviation/promoting equity of access and mobility.
- Underlying infrastructure: It is sufficient?
- Evidence of commitment: Political, stakeholder and long-term.
- Ability to leverage local and external funding.
- Evidence of GHGs reduction on a life cycle basis.
- Other environmental benefits.
- Net social benefits – the need to look beyond individual groups.
- Proven track record for project type.
- Analysis of options/risk assessment/mitigation strategies.
- Contingency planning as project proceeds (e.g. how to deal with higher or lower than expected ridership levels).

9.0 Final Recommendations

While the recommendations from each region reflected its unique characteristics (and need to be taken account of in future initiatives), there was a general consensus that the following options are likely to be the most beneficial and deserve special attention from proponents of future GEF sustainable transport initiatives:

- Public Rapid Transit (PRT) which encompasses Bus Rapid Transit (BRT), Light Rail Transit (LRT) and Trolley Electric Buses (Tbuses). The majority of the transport experts at the Brainstorming expressed preference for the Bus Rapid Transit (BRT) option (preferably with buses running on “cleaner” fuels such as low-sulfur diesel, LPG and CNG).
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In addition, the importance of a number of crosscutting issues were highlighted that should be addressed irrespective of the option that is being promoted. These include:

- Collection and dissemination of data and information on options and respective impact.

- Participation, promotion, social marketing and awareness creation.
- Emphasis on the provision of long-term financing for independent research and advocacy sustainable transport groups and agencies that can engender and sustain the emerging interest in non-technology sustainable transport projects. Some form of endowment funding would be appropriate particularly in a region such as Africa where the need for capacity building and institutional support is important.

It is also being recommended that the criteria for the prioritization of GEF sustainable transport initiatives would differ with location and type of the option that is being promoted. In this regard, emphasis could be placed on smaller towns and secondary urban centers where vested interests and barriers are not so daunting. By initially concentrating on smaller towns and secondary urban centers, the GEF could generate the results and impacts that could engender the momentum needed to face the enormous transport and GHGEs problems that bedevil most of the primary urban centers of the developing world.

It was observed that the dissemination of success stories is still inadequate. It is therefore being recommended that GEF consider the possibility of organizing regional workshops (starting with Africa which currently has no full OP#11 projects) to encourage the adoption of the aforementioned proven and successful non-technology measures to a wider audience. Establishment of regional forums can provide a convenient institutional framework for the organization of regional workshops and ensure effective implementation of the requisite follow-up activities.

Bringing together key stakeholders in the urban transport sub-sector (e.g. municipalities, transport authorities, concerned citizen groups, researchers, motorized and non-motorized vehicle assemblers and vendors, bus operators, concerned government agencies and private sector entities), the regional forums can provide an effective vehicle for engendering wider awareness of GEF sustainable transport initiatives. In addition, the forums can provide the framework for identification of priority urban areas that are suitable for GEF interventions and initiation of appropriate GEF sustainable transport projects.

In addition, the Meeting recommended that, in the near term, the GEF initiate smaller barrier removal/planning/demonstration projects (e.g. in the framework of its MSP portfolio) that would lay the groundwork for larger private sector or government investments in BRT, NMT, TDM and LUP. Examples of such initiatives include projects that support small and medium scale NMT enterprises in the developing world. This approach is likely to result in more effective use of the available GEF funds, especially in smaller and medium-sized cities.

Because of the time limitations, the Meeting did not address the freight transport issue. Participants, however, noted its importance and stressed the need for further attention on this issue. It may be the subject of discussion for the next STAP.

10.0 Next Steps

The Meeting recommended that, in the near term, the GEF and its partners undertake the following steps:

- Build on the enthusiasm and commitment demonstrated at the Brainstorming to establish a network on non-technology options for promoting sustainable transport. In the first instance, the network can be in the form of a low-cost electronic bulleting board and web-site. Should there

be greater interest, a more formal network can be established.

- Organization of regional workshops (which can, preferably, provide the platform for initiating the aforementioned regional forums) that encourage the dissemination of the growing number of GEF non-technology sustainable transport initiatives and encourage participation in GEF Transport OP11. With very few ongoing and planned transport projects, the Meeting recommended that Africa be given the first priority in the organization of a Regional Workshop on Sustainable Transport.
- Preparation of more detailed GEF guidance for the development of non-technology sustainable transport projects. Findings of this Brainstorming Meeting can provide essential building blocks for the preparation of the detailed guidance. One important recommendation that the detailed guidance could take on board is the suggestion that, in the near term, the GEF initiate smaller barrier removal/planning/demonstration projects (e.g. in the framework of its MSP portfolio). These projects would lay the groundwork for larger private sector or government investments in BRT, NMT, TDM and LUP. Examples of such initiatives include projects that support small and medium scale NMT enterprises in the developing world. This approach is likely to result in more effective use of the available GEF funds, especially in smaller and medium-sized cities.

Programme

**STAP Brainstorming Session on Sustainable Transport:
Non-Technology Options for Stimulating Modal Shifts in Urban Transport Systems
25th – 26th March, 2002, Nairobi, Kenya**

Day 1: 25th March, 2002

Official Opening

9:00am – 09:45am

Welcome by M. Gadgil, STAP Chairman (confirmed)
Statement: Representative from the GEF Secretariat
Statement: Representative from the UNFCCC Secretariat

09:45am – 10:00am

Coffee Break

10:00am – 10:30am

Aims and Objectives of the Workshop by Stephen Karekezi,
STAP Member and Workshop Coordinator.

10:30am – 10:45am

“Kyoto Protocol, the Bonn Agreement, the Marrakech Accord
and Sustainable Transport” by Katia Simeonova, UNFCCC
Secretariat.

10:30am – 11:15am

The GEF Transport Operational Program - OP11 by Y. Biro,
GEF Secretariat.

11:15am – 12:00pm

1st Overview Background Paper: Reducing Greenhouse Gas
Emissions by Shifting Passenger Trips to Less Polluting Modes,
Walter Hook, Institute for Transportation and Development
Policy (ITDP), USA.

Discussion

12:00pm – 12:45pm

2nd Overview Background Paper: Achieving Sustainable Urban
Transport in the Developing World: Non-technology
Approaches, Lew Fulton, International Energy Agency (IEA),
France.

Discussion

12:45pm – 2:00 pm

Lunch

2:00pm – 2:30pm

Case Study I - Singapore: T. Fwa, Center for Transportation
Research, National University of Singapore.

Discussion

2.30pm – 3:00pm Case Study II - Mauritius: B. Baguant & K.N. Bunjun, University of Mauritius and Ministry of Public Infrastructure and Land Transport.

Discussion

3:00pm – 3:30pm *Coffee Break*

3:30pm – 6:00pm Plenary discussion

Day 2: 26th March, 2002

9:00am – 09:30am Case Study III – Quito, Ecuador: C. Arias, Ecuador

Discussion

9:30am – 10:00am Case Study IV – Gaborone, Botswana: P. Zhou, Botswana

Discussion

10:00am – 10:30am Project I - Indonesia: D. Parikesit, The Center for Transportation and Logistics Studies, Gadjah Mada University, Indonesia

Discussion

10:30am – 11:00 am *Coffee Break*

11:00am - 11:40am Project II: UNEP, Tom Hamlin

11:40am - 12:20pm Project III: UNDP, Richard Hosier

12:20pm – 1:00pm Project IV: World Bank, Todd Johnson

1:00pm – 2:00pm *Lunch (Lunchtime video – Quito Bus Rapid Transit System)*

2:00pm – 3:30pm Working Group session continue (grouped by region – Latin America & Caribbean, Africa, Middle East & Asia)

3:30pm – 3:45pm *Coffee Break*

3:45pm – 5:00pm Presentation of working group results

5:00pm – 6:00pm Preparation of Brainstorming Report

6.00pm – 6:15pm Closing of the Workshop

Working Group Guidelines

- Identify priority options for GEF intervention
- Propose criteria for prioritization

- Suggest project ideas for possible GEF implementation

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