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The Improvement of Developing Country Transport Data Collection, Analysis and Dissemination

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Background Paper
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* *The Partnership for Sustainable, Low Carbon Transport is a voluntary, multi-stakeholder partnership registered with the Commission on Sustainable Development, consisting of over 50 organizations which have agreed to work together to advance sustainable, low carbon transport.*

I. Importance of good transport data

Good quality transport data are critical to planning and managing transport-efficient access to goods and services. Data are important for the planning of physical infrastructure (rail, road, waterways, air transport, pipelines, walkways, bicycle paths and their interconnections). They are also important to document transport activity that is taking place in support of economic and social development. Lastly, good quality transport data are important to be able to monitor environmental sustainability strategies for the transport sector.

Transport data can be classified in the following categories: (a) Transport mode related data; (b) Data related to transport infrastructure; (c) Data related to transport activity levels, (d) Data on fuel and energy use, (e) Data related to emissions, accidents and other externalities. Usage of transport data requires also the availability of reliable economic and demographic data.

Transport data are required for the local, national, regional and global level.

II. Deficiencies in existing transport data collection, analysis and dissemination

A. Primary data collection

There are large differences in the scope and quality of transport data which are being collected. Differences are among countries and among modes: air, water, railway and pipeline transportation usually have a better register of infrastructure, fleets and flows; the most serious weakness are in road and non-motorized transport (the dominant modes in domestic transport in many developing countries). There are also wide differences in the quality and reliability of data and in the scope and quality of analysis. Many countries face difficulties in improving their transport data collection in tandem with the rapid growth in the number of vehicles and transport infrastructure.

Problems and challenges faced by various countries include:

a) A common understanding of what data should be collected to track progress towards policy/societal objectives and *how* this data should be collected in order to be comparable with other regions and over time;
b) Reliable up-to-date origin/destination data for goods and passengers;
c) Differentiating between total number of vehicles registered and the number of vehicles which are actually operating on the road;
d) Reliable activity data, both in terms of passenger kilometers and ton kilometers;
e) Reliable assessment of non-motorized transport share (pedestrians and cyclists);

f) Fragmented responsibility for collection of different types of data and the absence of an organization with a mandate and organizational capacity to integrate different data sets;
g) Making full use of electronic media in the collection, analysis and dissemination of transport data;
h) Emphasis is still more on the collection of transport data for incremental expansion of existing systems than on the use of transport data for redesigning transport policy, urban development or environmental management. The rapid development of the transport sector in many cases has created a time-lag in the availability of data which hampers policy development;
i) Differentiation between rural, inter-urban and urban data. In cases where there are dedicated efforts to collect urban transport data, there is a challenge to integrate the often more detailed urban transport data sets with national databases;
j) Donor funded transport data initiatives and data collection through various transport projects using government funds are often not integrated with domestic transport data collection mechanisms or do not serve an ongoing transport management function.

B. Secondary Collection of Transport Data

There are several compilers of transport data on developing countries. In some cases these are intergovernmental organizations, in other cases this is being done by multilateral or bilateral development organizations or research organizations. The private sector also acts as a compiler of transport data but this is mostly done on a commercial basis and the data sets are not always freely available as in the case of other types of organizations.

Problems and challenges faced by secondary compilers of transport data:

a) With limited funding dedicated to transport data, there is a tendency to repeatedly utilize global top-down data sets and reuse what very limited structured data exists for a few developing countries.
b) Intergovernmental organizations acting as secondary compilers [e.g. International Energy Agency (IEA) and International Transport Forum (ITF)) have mandates which only partly involve developing countries;
c) Different organizations collect different types of transport data and there is no institutionalized mechanism for organizations to exchange information nor are there widely shared data collection criteria and definitions;
d) Continuity in data collection is a problem for several of the organizations and there are many, often overlapping, efforts compiling available primary data. In addition to being ad-hoc, these efforts are often under-resourced so that not all needed data is being collected;
e) The fragmentation in mandates and scope of efforts among secondary data compilers makes it difficult to provide developing countries with

comprehensive and consistent advice on strengthening of transport data collection, analysis and dissemination;

f) Capacity building on transport data has come in discontinuous spurts and has been interrupted due to lack of resources. Capacity building is not always driven by a clear vision especially for developing countries. The fastest growing medium size cities are in developing countries with the least capacity and most need of transport planning.

III. Priorities in improving transport data

The need to improve the availability and quality of transport data has been widely acknowledged. Most recently, in 2009, the Ministerial Meeting of G8 and Asian Transport Ministers on Global Environment and Energy in Transport (MEET) called for an improvement in "the accuracy, adequacy and comparability of statistics on environment and energy for transport to support effective policy making and assessment of progress".

An Expert Consultation Meeting on Methodologies for Assessing Transport System Efficiency & Benefits for Development organized by UNDESA in June 2009 discussed the need for lower cost, flexible transport system assessments. Such transport assessments (a) include structured activity data for planning, (b) allow for estimation uncertainty, and (c) enable developing country capacity building for modal retention planning in passenger (public and NMT) transport and freight transport (rail and waterways), and (d) support the development of policies for fuel efficiency.

Improving the availability and quality of transport data will be a long term process. A phased approach will have to be adopted. Priorities for the individual phases will have to be set based on a commonly defined long term goal. Without prejudging the detailed objectives for a future effort, it can be assumed that a coordinated effort to improve transport data in its initial phase would at least have to include activities:

- Aimed at broadening the scope and quality of data being collected at the primary level where it is particularly important to have better data on road transport;
- Aimed at the processing of data that are already currently gathered by public entities (e.g. customs) but are not being made available and are not processed;
- To promote the participation of private operators to register and make public the data they currently gather, while protecting their commercial interest;
- To improve the use of transport data in transport, urban and environmental policy making;
- To reduce the fragmentation among secondary data compilers by ensuring better integration of data compilation efforts for developed and developing countries and by ensuring better integration of datasets being collected by different groups;
- To coordinate capacity building efforts by secondary compilers. This will require that these organizations start to talk with one voice in terms of

concepts and methodologies when dealing with developing countries and cities;
- To create a joint repository of secondary compiled data to which different organizations contribute and which has open access. This can reduce the overlap in duplication of secondary data compilation efforts and help to create a more uniform structure in data collection;
- To explore the potential of bottom-up collaborative data collection, data mapping and data vetting methodologies making use of new media like Internet and cell phones. (See http://en.wikipedia.org/wiki/Public_Participation_GIS and http://en.wikipedia.org/wiki/Collaborative_mapping for a brief description).

In general the emphasis should be on data which are:

- Comprehensive – Indicators should reflect various economic, social and environmental impacts, and various transport activities (such as both personal and freight transport).
- Accurate – Data collection practices should reflect high standards to insure that information is accurate and consistent.
- Comparable – Data collection should be standardized so the results are suitable for comparison between various jurisdictions, times and groups. Indicators should be clearly defined.
- Accessible and Transparent – Indicators (and the data they are based on) and analysis details should be available to all stakeholders.
- Cost effective – The suite of indicators should be cost effective to collect.

A two-pronged approach in which improvements of primary and secondary transport data go hand in hand makes the most sense. Indeed the two efforts should be closely coordinated, with a view to ensuring that primary data are collected using common protocols that allow for easy consolidation into consistent multi-city, multi-region, multi-country databases.

In due course, countries and cities in developing countries should experience direct improvements in their transport, urban and environmental planning because of improvements in the availability and quality of transport data.

IV. Recommendations on institutional structuring of improved transport data collection, analysis and dissemination

The institutional responsibility for the improvement of the availability and quality of transport data will differ between primary collection of transport data (which is a local and national responsibility) and the secondary collection and dissemination (which is mostly a regional and global responsibility). The improvement of local and national transport data efforts will be facilitated if this is preceded by a strengthening of secondary efforts, especially if such secondary efforts take on a more pro-active effort in providing

conceptual guidance, engage more in capacity building and coordinate better among themselves.

The strengthening of secondary efforts will require leadership. Taking into account the current effort, mandates and organizational capacities, it is recommended that such leadership integrate the United Nations (UN-DESA Division for Sustainable Development and Statistics Division), the International Energy Agency (IEA) and the International Transport Forum (ITF). It is important that these three organizations cooperate closely with organizations as the International Road Federation (IRF), the International Union of Railways (UIC) and the International Association of Public Transport (UITP), which are all collecting information on transport infrastructure. UNDESA, IEA and ITF, together with these organizations on transport infrastructure, have mandates which cover the world and all aspects of transport data. The global scope is important because this allows that improved primary data will be collected and integrated in global databases and be used for regional and global policy scenario development.

It is proposed that UN-DESA, with the active direct involvement of ITF, IEA as well as other relevant organizations, and with active consultation of other secondary data compilers, take the lead in:

a) developing a protocol for a harmonized compilation of transport data from both developed and developing countries;
b) developing recommendations for an institutional structure which facilitates the implementation of the protocol for harmonized compilation of transport data;

It is proposed that the SLoCaT partnership take the lead in convening its members and other organizations interested in transport data with the aim to:

a) document local, national and regional capacity building efforts to improve primary data collection and make this information widely available;
b) assess further capacity building efforts and needs in developing countries;
c) develop an institutional coordination structure which can (i) strengthen the coherence between individual autonomous capacity building efforts, (ii) help to increase the overall effort for capacity building on primary transport data collection, analysis and dissemination, and (iii) incorporate private sector data gathering efforts.

It is proposed that UN-DESA and the SLoCaT partnership coordinate their consultations among stakeholders by convening a joint expert meeting. The meeting will review and further develop proposals for collaborative efforts toward improving international data gathering and modeling for planning and management purposes. They can report their progress to the 19th session of CSD and make specific proposals with respect to institutional coordination and capacity building on transport data.