

**Activity Patterns, Transport and Policies for the Urban Poor**  
**Urban Mobility Planning Guidelines**  
**Final Report**

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**Activity Patterns, Transport and Policies for the  
Urban Poor: Urban Mobility Planning Guidelines  
Final Report**

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<b>APPROVALS</b>			
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# Activity Patterns, Transport and Policies for the Urban Poor

## Urban Mobility Planning Guidelines

### FOREWORD

These planning guidelines are based on a collection of case studies undertaken for the Department for International Development (DFID) funded Knowledge and Research project ‘Activity Patterns, Transport and Policies for the Urban Poor’. Case studies were carried out in Zimbabwe by the Transport Research Laboratory (TRL) and University of Zimbabwe, in Ghana by the Centre for International Development (CIDT, University of Wolverhampton) and Comptran, and in Sri Lanka by the Water, Engineering and Development Centre (WEDC, University of Loughborough) and Sevanatha. Country reports of these case studies are available from the DFID Transport-Links website:

[www.transport-links.org/transport\\_links/projects/kar\\_themes.asp](http://www.transport-links.org/transport_links/projects/kar_themes.asp)

## 1 INTRODUCTION

### 1.1 Purpose and format

This document provides guidance on the development of urban transport planning and policies taking account of the needs of appropriate stakeholders and beneficiaries; it particularly addresses the ways in which urban transport can influence how well other sectors (e.g. health, education, employment) operate and deliver their services, which contribute to the sustainable livelihoods of the urban poor.

A key output from this project is that transport development policy can strengthen the poverty alleviation objectives. This document is intended for use not only by urban transport planners, but also by policy makers and planners who have oversight of other sectors. It emphasises the need to understand the nature of activity patterns within the urban community, and hence the role (both current and desired) of transport in meeting the livelihoods aspirations of the urban community. In the spirit of the Millennium Development Goals<sup>1</sup> (*in particular Goal 2: Achieve universal primary education, Goal 4: Reduce child mortality, and Goal 8 Build a global partnership for development*) and poverty reduction strategies, this guide focuses on the activity patterns of urban poor people. It provides the basis for establishing how transport can be developed to support their needs, while also contributing to the objectives and performance of other sectors in meeting the same development goals.

The guidelines are structured into four broad sections:

- **Method of enquiry (Chapter 2):** Recommended methodologies to identify transport accessibility problems and issues that impact on the operation and

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<sup>1</sup> The Millennium Development Goals (MDG) emerged from the United Nation’s Millennium Summit in 2000 at which global leaders made a commitment to overcome global poverty. The MDG’s comprise goals, targets and indicators for achieving significant, measurable improvements in people’s lives. See [www.developmentgoals.org](http://www.developmentgoals.org) for more information.

delivery of other sectors (in particular health, education and employment) and also the travel problems of the disabled.

- **Transport planning framework for the urban poor (Chapter 3):** An analytical framework that categorises mobility issues and problems in terms of their poverty dimensions.
- Following from Chapter 3, it also presents the concept of a **transport relevant poverty audit (Chapter 4)**, that should be undertaken in association with any transport development.
- **Institutional strengthening and capacity building (Chapter 5):** Recommended measures to encourage and facilitate appropriate approaches to transport enquiries undertaken by local organisations.

The guide is not intended to be a blueprint for planners and policy makers, but rather a template or checklist of the transport issues that impact on the different attributes of poverty, and the ways in which transport interventions can improve services provided by other sectors in an effort to counteract urban poverty.

The guidelines draw on the findings from three urban transport case studies undertaken in Accra (Ghana), Harare (Zimbabwe) and Colombo (Sri Lanka). The research case studies were undertaken<sup>2</sup> to examine, and hence provide guidance on:

- What are the determinants of activity patterns in the urban sector?
- How does the process of undertaking the research inform the development of policies (in both the transport and other sectors) to meet livelihoods aspirations?
- How can transport be developed to support the objectives of other sectors?

The case studies are reported elsewhere<sup>3</sup>, but materials from them are used to illustrate the guidelines where appropriate. As further supporting resources, a video and CD with software support for internet streaming, and Braille documents have been produced by CIDT<sup>4</sup> to demonstrate the effectiveness of participatory approaches in understanding the transport needs of the urban poor.

## 1.2 Activities and transport

Traditionally urban transport planners have been concerned with understanding trip patterns (spatially and temporally) as an indicator of travel demand. Models can be developed which relate disaggregated household trip rates to household attributes, and these can be used to forecast future demand for transport, given a knowledge of how population characteristics are expected to change over time. A problem with this approach is that it focuses on average values and patterns (which reflect a historic and

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<sup>2</sup> The field research was undertaken by TRL, University of Zimbabwe, CIDT (University of Wolverhampton), Comptran (Accra), WEDC (University of Loughborough) and Sevenatha (Colombo).

<sup>3</sup> Field reports can be seen on [www.transport-links.org/transport\\_links/projects/kar\\_themes.asp](http://www.transport-links.org/transport_links/projects/kar_themes.asp)

<sup>4</sup> The video is available from CIDT, University of Wolverhampton, Telford Campus, Telford, TF2 9NT, UK.

largely static supply picture), and hence conceals much of the detail and variation in demand, which is more representative and of concern to the individual.

There are still good reasons to retain the traditional approaches to transport planning (its quantitative nature has appeal, particularly in the context of planning complex road and transport networks). However, this guide suggests that the planning process can be complemented by a better understanding of household activity patterns, and the impacts and implications of travel on livelihoods. Such an understanding offers several benefits in the planning process, including:

- Participatory enquiry is far more informative than trip-making analysis to policy development, both in the transport sector and cross-sectorally, particularly in respect of the urban poor who are so reliant on public and non-motorised transport (e.g. bicycle and walking) for mobility and access.
- Through participatory processes, stakeholders and enquirers can move towards a common understanding of how activities are managed within the household, and hence how they influence transport use and needs; and suggest where priorities may lie in the development of transport.
- Focussing on activities helps to establish the role of transport in servicing other sectors, notably health, education and employment; and hence how transport can be developed to support these other sectors.
- As an extension of all of the above, it supports the development of poverty auditing of transport development policies and plans; better knowledge of how individuals, households, and communities order their activities will help to predict the impacts of transport developments on their livelihoods. Hence transport development policy can be aligned to poverty alleviation objectives.
- It is increasingly becoming difficult to draw on quantitative surveys in transport planning because the evolving demographics contained within a 'community' are changing so rapidly, as are perceptions of the 'household' which makes sampling and subsequent surveying progressively more problematic.

## **1.3 Transport and the urban poor**

### **1.3.1 Poverty attributes**

Development aid is now highly poverty focussed, and the justification for transport investment is shifting from that of pure economic efficiency to the equity implications: *in what ways does transport provide benefits and disbenefits for the poor?*

There are many attributes to poverty, but for the purpose of analysing the impact of transport, the route to poverty reduction is described in terms of four key dimensions:

- Economic growth, it has been argued, is the mechanism by which opportunities are created for new investment and employment. Transport contributes to economic growth by mobilizing human and physical resources. Improved productivity and output helps to 'lower transaction costs, allow economies of scale and specialization, widen opportunities, expand trade, integrate markets, strengthen effective competition, and eventually increase real income and welfare of society. Without efficient transport, economic growth is not possible, and without growth, poverty reduction cannot be sustained'.<sup>5</sup>

There are distributional aspects to growth in that the growth may favour particular sectors of society. Redistribution can involve targeting transport interventions directly at the poor, and in this sense projects aimed at improving public transport can be viewed as pro-poor. Such projects may not be as economically efficient as others to which the money can be put. This presents the difficulty of balancing efficiency and equity.

- Capability is that element of poverty associated with human capital and quality of life. Transport can play a big part in improving this attribute of poverty by providing access to education, health-care facilities, etc, i.e. access to the opportunities and means to improve human capital, defined as skills, knowledge and ability to labour.
- Empowerment is that dimension of poverty that reflects the need (and inability on the part of the poor) for participation and inclusion in all the political and social processes and networks. Transport is a mechanism for supporting effective participation.
- Security reflects the vulnerability of the poor to the uncertainties of life, particularly the vulnerability of the poor to sudden shocks, and the ways in which they cope. Transport should contribute to greater security by removing any sense of vulnerability, which is a product of immobility, defined by isolation, marginalisation and risk.

Table 1 identifies some of the urban transport issues, which are reflected in these poverty dimensions.

**Table 1: Transport and dimensions of poverty**

Poverty attribute	Transport issues
<b>Opportunity</b>	<ol style="list-style-type: none"> <li>1. Access to employment</li> <li>2. Access to education and training</li> <li>3. Employment within transport sector</li> <li>4. Affordability of transport</li> <li>5. Time use / time poverty</li> <li>6. Access to market credit</li> <li>7. Access to farm input</li> <li>8. Opportunity to own transport</li> </ol>

<sup>5</sup> Poverty reduction strategy paper (PRSP) Sourcebook. Transport: Infrastructure and services (C Gannon and Z Liu). Draft, August 2000.

	9. Access to transport services
<b>Capability</b>	<ol style="list-style-type: none"> <li>1. Access to health and social services</li> <li>2. Access to land and housing</li> <li>3. HIV/AIDS (role of transport in the spread of HIV)</li> <li>4. Access to education and training</li> </ol> Access to water
<b>Security and safety</b>	<ol style="list-style-type: none"> <li>1. Personal security (isolation without transport access)</li> <li>2. Violence encountered in using transport</li> <li>3. Road safety / safety in operation</li> <li>4. Environmental inputs</li> <li>5. Time use / time poverty</li> <li>6. Access to land and housing</li> </ol>
<b>Empowerment</b>	<ol style="list-style-type: none"> <li>1. Participation in planning / policy-making / management</li> <li>2. Knowledge / information – user involvement</li> <li>3. Development of and access to social capital / social networks</li> <li>4. Access to education and training</li> </ol>

### 1.3.2 Interventions which impact on transport, and their outcomes

Any developmental intervention that addresses a transport issue will have some resulting impact on one or more of the poverty attributes. Interventions may be of an indirect or cross-sectoral nature (e.g. the location policy of education facilities which will impact on transport requirements for students) or direct (e.g. the policy adopted towards transport competition will impact on service availability and cost, hence access). The direct interventions, or transport projects, usually consist of a number of related components that address policy, institutional, and regulatory issues, as well as infrastructure investment and operational efficiency. At any of these levels, there will be some impact on poverty. Table 2 identifies some of the possible interventions at policy, planning and strategy levels, and the possible outcomes for poverty. It may be viewed as a framework from which the guidelines can be investigated.

Understanding the nature of urban activity patterns is an aid to predicting the likely outcomes, in poverty terms, of interventions (both direct and indirect) which influence the performance of the transport sector. A poverty audit of transport attempts to identify possible outcomes of interventions in terms of impacts on the activities of the poor, and to suggest remedial measures as appropriate.



**Table 2: Examples of potential transport interventions and their outcomes**

Level of intervention	Interventions (which affect or are part of transport)	Potential transport impacts and poverty outcomes
Macro-level: cross-sectoral policies	<ol style="list-style-type: none"> <li>1. Gender policy</li> <li>2. Decentralisation policy</li> <li>3. Location policy for health and education facilities</li> <li>4. Policies for people with disabilities</li> </ol>	<ol style="list-style-type: none"> <li>1. A positive gender policy may impose planning and operating conditions on transport development</li> <li>2. Level of transport 'expertise' diluted by decentralisation – possibly less chance of planning for the poor</li> <li>3. Transport has to adapt to decisions made in other sectors, which is not necessarily efficient for sector</li> <li>4. A positive policy for people with disabilities may impose planning and operating conditions on transport development</li> </ol>
Transport sector policy and programmes	<ol style="list-style-type: none"> <li>1. Regulation and control of transport sector (standards and quality, quantity, fare levels, etc)</li> <li>2. Policy in respect of dealing with growth in travel demand (e.g. encouraging mode shift)</li> <li>3. Improved planning processes, which include participation (from the poor, including the voice of women, youths, the elderly and infirm)</li> </ol>	<ol style="list-style-type: none"> <li>1. The quality and performance of a urban transport system (and hence its impact on the poor) may critically depend on policies and programmes</li> <li>2. Funding for new schemes where the returns will be over a long time (e.g. new infrastructure) versus spending in the short term (subsidised public transport) and hence achievability of targets</li> <li>3. Policies if developed must be seen to be implemented or will lead to apathy in the participatory process</li> <li>4. People may expect something or some improvement for their participation (what's in it for me!). If nothing happens they might be less inclined to give up their time in the future</li> </ol>
Transport infrastructure	<ol style="list-style-type: none"> <li>1. New and rehabilitated roads and other transport infrastructure (i.e. bus shelters to protect users from adverse weather)</li> </ol>	<ol style="list-style-type: none"> <li>1. Improved transport productivity feeding through to economic growth, and hence job opportunities for the poor (not always for women)</li> <li>2. Direct job opportunities in construction work</li> <li>3. Involuntary resettlement of poor (burden for women)</li> <li>4. Possible environmental damage.</li> <li>5. Easier travel (and hence access to externally provided facilities, social networks and participatory machinery)</li> <li>6. Increased risk of traffic accidents (higher vulnerability of poor and increased economic risk for women)</li> <li>7. Decreased cost of vehicle running costs through better road condition</li> <li>8. Disabled and children boarding of transport made easier (reduced time for reaching transport. (e.g. getting over drainage structures)</li> </ol>

		<p>9. Shelters providing protection of goods and persons</p> <p>10. Poor construction and interaction of roads and urban drainage systems, could increase water and sanitation problems</p>
Transport operations	<ol style="list-style-type: none"> <li>1. Investment in public transport</li> <li>2. Support measures for non-motorised transport</li> <li>3. Traffic management</li> <li>4. Training programmes and support for operational staff</li> <li>5. Enhancements in enforcement</li> <li>6. Subsidies for transport operations / transport service allowances for employees</li> </ol>	<ol style="list-style-type: none"> <li>1. As with transport infrastructure, improved productivity feeding through to economic growth</li> <li>2. If the carriageway is set, how much should be for non-motorised transport (NMT) and motorised transport (MT). NMT will possibly benefit the poor but will impinge on economics of MT</li> <li>3. Less accidents for which the poor are usually victims through better driving</li> <li>4. Removal/retraining of poor drivers/mates who have a negative affect on other road users and passengers. Also, improvements in customer care, particularly for physically challenged people.</li> </ol>

## 2 METHODS OF ENQUIRY

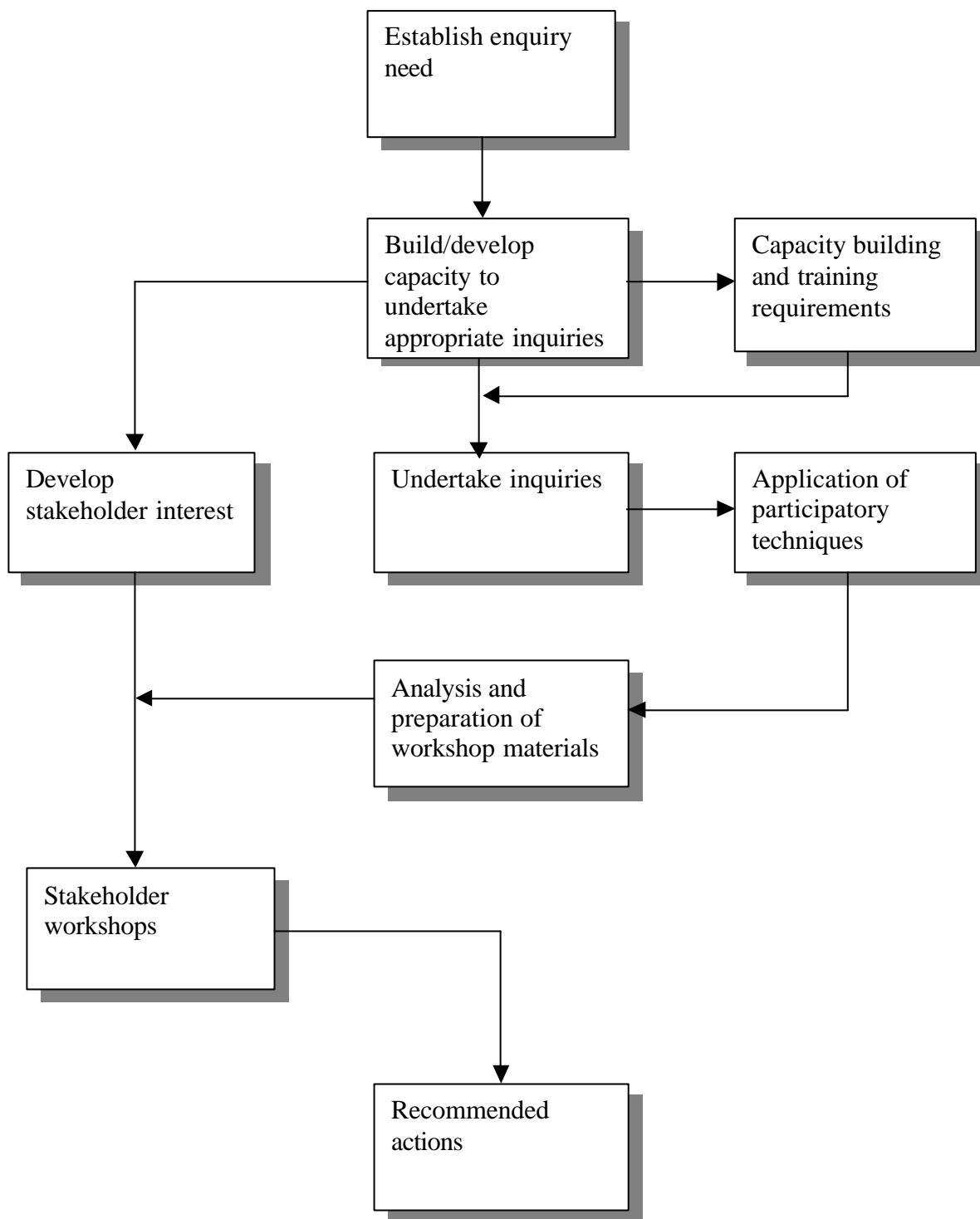
### 2.1 Overview

In order to identify the need for urban transport planning interventions, initial research is required to examine the transport needs and constraints of poor people and how these impact on access to income earning opportunities (both formal and informal employment) and social services (e.g. health and education facilities). Drawing on a variety of appropriate quantitative and participatory approaches and methodologies, urban planners can:

- Identify and prioritise transport problems
- Assess the impact of transport constraints on other sectors
- Identify possible solutions to counteract any adverse effects on people's livelihood opportunities.

This chapter provides advice on undertaking surveys. For this purpose, the methodologies from the case study sites can be adapted and 'localised' by planners to ensure all stakeholders are represented and participate during the consultation process.

Figure 1 sets out a simplified flow diagram of the urban transport enquiry process, emphasising the role of stakeholders and the participatory process. The guide endorses the value of involving stakeholders, but points to the need for appropriately trained staff to undertake the task of engaging with the stakeholders. Figure 1 also points to the need for capacity building of the enquiry team, and this is discussed more fully in Chapter 5. As an example of the detailed steps that might be adopted in order to complete the enquiry process; Box 1 presents the process developed in Colombo, Sri Lanka.



**Figure 1: Simplified flow diagram of urban transport enquiry process**

**Box 1: Possible steps in an enquiry process - based on those followed in Colombo**

**Establish enquiry need:**

1. Understanding the enquiry premise and developing the research proposal to suit the local conditions in Colombo.
2. Identification of the type and depth of information and data required based on the key issues, actions and processes involved.
3. Identification of main sources of data and informants for the enquiry through review of literature and personal contacts of resource persons.
4. Developing checklists for collection of required data and information.
5. Carrying out a literature survey.

**Develop capacity to undertake appropriate enquiries:**

6. Identification of urban poor settlements for interviews based on the criteria developed under the enquiry.
7. Identification of resource persons for the Project Advisory Committee.
8. Identification of field research staff and recruiting them for carrying out field data collection.
9. Briefing for field research staff on the project and training them for carrying out field data collection.
10. Carrying out a historical analysis related to public transport and development of the city's activity pattern using the available literature and interview of resource persons.
11. Visit to identified urban poor settlements, familiarise with the communities, briefing the purpose of the project to the community leaders and getting their support to identify the required urban poor families for the interviews.

**Undertake enquiries:**

12. Preparation of settlement profile for each identified urban poor settlement with the support of community leaders consisting of basic facts about the community, its location & size etc.
13. Interview of identified community members (men, women children)
14. Filling out of a travel diary for five families for settlement in the six urban poor communities for a period of continuous one week in order to understand the daily travel pattern of the family members.
15. Interviews of resource persons of relevant government agencies who are engaged in formulating policies for the activity patterns in the city (i.e. Urban Development Authority, Ministry of Health, Ministry of Education, representatives of major employment centres etc.).
16. Use of information already gathered under the research project on Partnership to Improve Access and Quality of Public Transport in Colombo, which was carried out just prior to this study.
17. Discussion of project progress with the Project Advisory Committee members at review meetings held at frequent intervals (e.g. once a month).

**Analysis and preparation of stakeholder workshops:**

18. Synthesising the information gathered through interviews. Translating the information from local language to English language.
19. Revisiting the urban poor communities for verification of some of the information.
20. Processing information (analysis).
21. Preparation of the draft report.
22. Presentation of the draft report to the members of Project Advisory Committee.
23. Preparation of the final report incorporating the comments received from the above persons.
24. Organising a national workshop in Colombo and presentation of the findings.
25. Producing a proceedings report on the national workshop.

## **2.2 Qualitative methods**

Participation of stakeholders and beneficiaries is essential in giving a voice to urban residents, in particular poor and vulnerable groups. Participatory urban decision-making comprises a series of decision making methods and tools that facilitate an exchange of perceptions, attitudes, values and knowledge between those who are affected by or significantly affect a critical issue, so that all stakeholders can collaborate and forge consensus on planning decisions and prioritise interventions.

### **2.2.1 Key informant interviews**

These are directed at understanding how health, education, employment and transport systems are organised and function across the case study cities, as well as the way in which each is used, and in particular their inter-connectivity. The surveys should identify the part (big or small) that transport plays in maintaining levels of social service, and the constraints that transport imposes on the poor in making effective use of these services.

These interviews address the institutional capacity of the organisations involved in the provision, operation and use of transport. They target among others:

- Local and central government officials
- Transport operators and staff
- Education and health officials and staff.

Many of these will have already been identified in developing stakeholder groups.

### **2.2.2 Participatory work**

The general approach is to use focus groups to establish key issues, and in particular the issues and problems related to transport. Other qualitative and quantitative (e.g. household interviews) surveys then follow, which will reflect the nature of responses from initial focus group work. Participatory methods should seek to dis-aggregate sample groups by age, gender and income where appropriate.

Participatory methodologies, described in this document as Participatory Urban Analysis (PUA), are applied to provide an understanding of the transport requirements and constraints experienced by the urban poor which hinder livelihood outcome achievements, and their activity patterns in relation to transport and social service utilisation. PUA techniques include semi-structured household interviews, matrix and wealth ranking, mobility mapping, institutional diagramming, transport focused discussion starters, priority ranking of major concerns, causal impact analysis, and livelihoods analysis (see Box 2 for a description of Participatory methods and their role in the transport planning process).

The essence of these methods is to draw on responses of local people using the outputs of their contributions in participatory exercises to understand the nature and organisation of activity patterns. This provides an extra dimension to the outputs of traditional transport fieldwork (the surveys of transport performance and demand characteristics – see household surveys below). In the course of participatory exercises, respondents may express their vulnerability in terms of gender, health care, crime and safety, education, and certain features of employment. There will then be

opportunities for individual case study countries to pursue issues that emerge as being priority concerns of the urban poor.

Focus group discussions ensure validation and complementarity; however the choice of specific research methods utilised may vary depending on capabilities and existing secondary information. Indeed, the process of conducting participatory research is determined not by the researcher, but the participants, and as such the participatory survey methods will not be prescribed, but will evolve through discussion and reflection with local communities. To this end, a process of ‘action-based learning’ should be encouraged, with the findings of the PUA fed back to the community.

The output from this stage is a broader appreciation (for particular target groups) of the (transport) resource needs required and strategies employed by urban households to improve their livelihood outcomes and life chances. This information feeds into the overall analysis of survey data, but more specifically will help to triangulate the data extracted from the questionnaire surveys on the behavioural and attitudinal aspects of urban trip purpose.

**Box 2: The role of participatory methods in the transport planning process**

PA combines a variety of visual methods with group work and semi-structured interviewing techniques. The idea is to enable local people to share their perceptions and identify, prioritise and appraise issues from their unique perspective and knowledge of local conditions. In this way, local people are seen as experts on their own lives, and their views become the starting point for local planning and action. The use of PA reinforces key principles of community participation and ownership in transport policy-making, planning and actions. In Ghana, PA also provided a useful capacity-building opportunity for building consensus around transport concerns in a broader Livelihoods and urban planning context.

By utilising visual methods and tools, PA enables people to participate in policy-making, planning and action regardless of age, ethnicity or literacy. With careful facilitation, it is possible for visually impaired people to participate even where visual tools such as community mapping, diagrams, charts and ranking exercises are done.

In these guidelines, we refer to Participatory Appraisal (PA) as a creative learning process, which involves a team of researchers, development practitioners or local people working together to share, reflect on and analyse collective local experience. We also use the term Participatory Urban Analysis (PUA) to emphasise that PA approaches can go beyond survey work, to inform policy and planning and actions that follow. Since PA approaches may be used at any of these stages, they can provide a means of ensuring full stakeholder participation, especially with transport service users.

Participatory tools used in Participatory Urban Analysis are multifarious and should in no way be applied as a blueprint for community development. Rather, they can inform the learning and reflective process and help respondents to visualise both problems and solutions. Box 3 illustrates a typical approach to participatory work, as used in Harare.

It is common practice when undertaking participatory appraisal activities to approach community ‘gatekeepers’ to facilitate entry into communities and to mobilise groups of people dis-aggregated by demographic characteristics such as age, gender, wealth and possibly occupation. Gatekeepers are especially important in mediating between PUA facilitators and participants so that any conflicts can be managed appropriately at the outset, before the PUA exercises commence.

### **Box 3: Qualitative surveys used in Harare**

The main qualitative methods used in the Harare case-study work were:

- Participatory Urban Appraisal (PUA) which were held with:
  - Community members in each of the six sites
  - School children
  - The disabled at ROSEP, an organisation which endeavours to secure work for the disabled from the private sector (although work is not always guaranteed).
- Discussions with patients, clinic staff and school teachers using semi-structured interviews
- Discussions with relevant personnel of Ministry of Transport and Communications, Ministry of Local Government, Ministry of Education and Culture, Ministry of Public Service, Labour and Social, City of Harare's Departments of Health and Housing and Community Services and National Council for the Disabled Persons of Zimbabwe.

In respect of PUA with members of the community, a meeting was held with randomly selected community members at each site. The point of discussion with participants was activity patterns pertaining to livelihood activities including income generation and development of human capital (principally health and education), which thus formed the basis for the examination of mobility patterns of people within the study area. Participants were divided into sub-groups (disaggregated by gender where appropriate) to discuss transport and other relevant issues in relation to their main livelihood activities. A wide range of PUA tools was employed to generate the basis for livelihood analysis. These included priority ranking exercises, matrix scoring and ranking, institutional diagrams and mobility mapping.

Livelihood analysis, mobility mapping and the analysis of resultant maps were undertaken in livelihood-based groups, in addition to 'plenary' discussions to cross-check and triangulate the results of sub-group activities. Travel destinations, costs, times and transport modes associated with specific livelihood activities were also explored, resulting in the production of 'spider diagrams' demonstrating issues relating to particular routes and destinations, and associated travel needs and constraints.

Focus group discussions (FGDs) on specific issues were also used to provide critical and considered insights around specific outcomes of group discussions. These were used in addition to plenary sessions, which were utilised to explore the historical profiles of the transport systems in each of the local areas. Elderly members of the group emerged as the key informants for the discussion on historical development of the transport system.

Community maps showing the physical and social infrastructure proved to be a major tool used to catalyse discussion on issues and perspectives on the livelihood-transport systems interface.

Managing large numbers of people did not present any difficulties within the community discussions as most of the exercises were done in smaller livelihood-based groupings. In most cases discussions were more 'diverse' and 'richer' in terms of outcomes where large numbers of people were involved, and bigger groups were not constrained by the usual scenario of some participants unduly taking over discussions at the expense of others.

At each of the six sites, a school and a clinic were identified for in-depth analyses of mobility patterns and problems related to access to education and health services respectively. Access was reviewed in terms of transport modes, travel patterns and times, distance and associated problems with the provision of services and non-motorised interventions. In each instance, teachers, pupils, health personnel and patients were drawn into discussions to determine where there are potential difficulties in staff accessing their place of work, and users accessing health and education services.



## 2.3 Quantitative methods

### 2.3.1 Transport surveys

A transport inventory of service availability should be undertaken for each community location that is surveyed. This identifies what transport opportunities are available and will include information such as:

- Characteristics of public services available (modes, frequency, operational times, etc).
- Frequency, distance and cost to key locations (e.g. education, city centre, shopping facility, health centre)

Urban transport data of varying adequacy are likely to be available which cover:

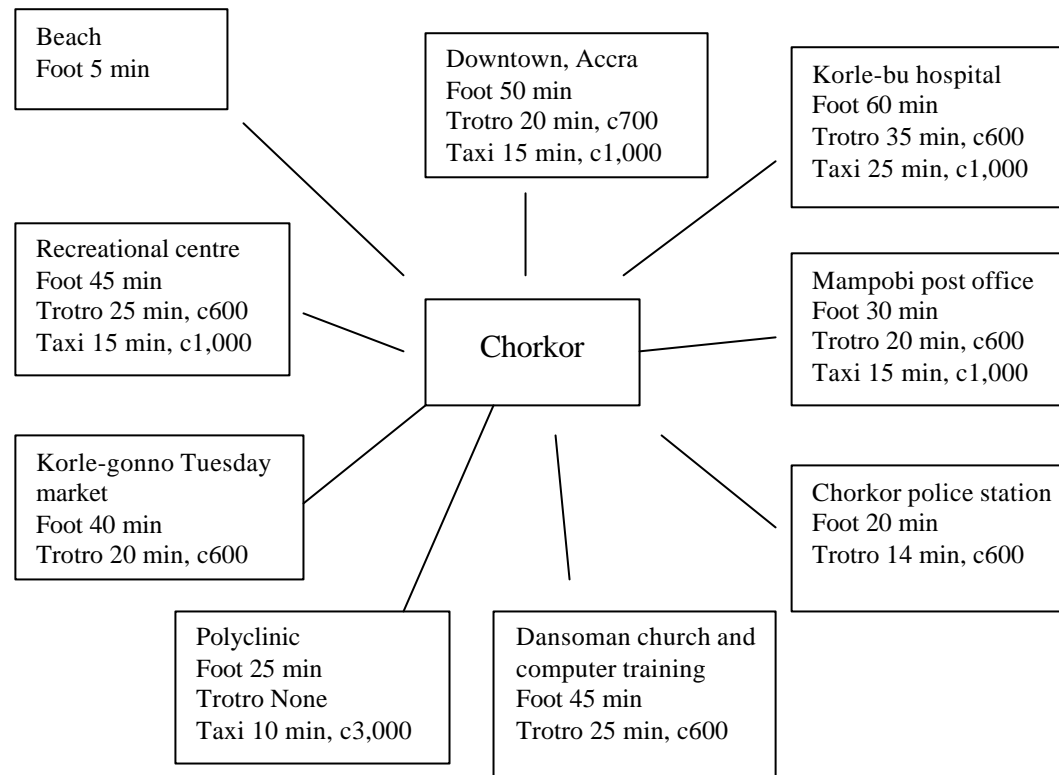
- Road safety
- Road provision
- Vehicular fleet
- Transport prices
- Public transport output

Data sources, even where they exist, largely provide information on the inventory of transport facilities; there is usually no information on the quality or level of service being provided. It is in this context that surveys are necessary.

Data can be captured through bus and car journey time and loading surveys, passenger and driver interviews, passenger waiting time surveys, traffic counts, and the monitoring of prices. Each survey will yield information for more than one performance indicator and conversely, some performance indicators may be a composite from different survey types. For example, transport prices can be determined from driver interviews or passenger surveys, but information from both surveys may be needed to give a complete picture of fare structures, including any informal aspects of pricing policy.

Information maybe presented in very simple ways in order to make understanding easy. Box 4 shows how public transport modal choice factors (essentially cost and time) can be presented to highlight the options and priorities.

**Box 4: Summary presentation of modal choice to key destinations in Accra (based on nine discussants from a Youth Club in Chorkor)**



Ranking of priorities for improvement in quantity and quality of journeys from Chorkor

- Korle-bu hospital
- Polyclinic
- Downtown Accra
- Post-office
- Dansoman
- Tuesday market
- Recreation centre
- Beach

Ranking of problems, travelling by trotro<sup>5</sup>

- Roads are rough and uncomfortable to travel on
- Trotros are old
- Over-speeding
- Overcrowding
- Drivers and mates have a poor attitude; e.g. insult the passengers
- Seats are uncomfortable (hard, small, metal)
- Ventilation is poor
- Hot inside trotro.

<sup>5</sup> Trotro is the name give to a privately operated passenger minibus in Ghana

### 2.3.2 Household surveys

Small-scale household surveys can be implemented, where appropriate, in selected survey areas to provide benchmark information of how communities, households and individuals make use of the transport system that is available to them. The purpose is ultimately to relate 'transport issues' identified by the focus groups to quantifiable data describing the activities of typical households (It is important to note that the dynamics of social and cultural circumstances within a 'household' is changing over time, and local variances must be accounted for). Information collected should cover:

- Household characteristics (composition, transport requirements and opportunities, income earning activities, schools and health facilities, etc. Box 5 gives an example of the use of household surveys)
- Trip making characteristics (destination, frequency, distance, mode, fare, time, etc.)
- Travel diaries (see Boxes 6 and 7)

It is suggested that the sample size for the surveys should be of the order of 50 households per community location, dependent of course on the size of the community and definition of 'household'. Alternatively, a proportion of households in the community, for instance 5% or 10%, could be sampled for the survey to account for community size and composition. Clearly, analysis of the information needs to be disaggregated by gender, age and income, etc. as appropriate. Inclusion of female-headed households in the sample should be requisite.

For the purposes of the baseline survey, households can be selected using random stratification, that is, ensuring that certain groups in the population are included in the survey. A stratified sample can be constructed by dividing the population into groups of importance. One can take a percentage of the sample from those groups in proportion to their representation in the population e.g. 30% women, 40% men, and 30% children. Alternatively, the sample can take equal numbers of each stratum e.g. 30 women, 30 men, 30 children (Mikkelsen, 1995).

#### **Box 5: Household surveys in Colombo**

In organising the primary data collection work for the present study the key words such as activity patterns, transport policies and urban poor were used as guiding themes. The key persons and institutions relating to the above themes were thus identified. They included primarily the urban poor, representatives of service providing agencies and transport providers. Among the urban poor, the men, women and children who are engaged in daily travel and frequently and use different modes of transport have been interviewed. Several attributes such as personnel data, livelihood assets, vulnerability aspects, the activities they engaged in, frequency of travel, the mode of transport used, the waiting time, the facilities inside the bus, travel expense, opinion on the location of activities related to their livelihood patten, overall satisfaction on the transport mode used and the suggestions to overcome the problems they faced were identified in collecting relevant data.

Considering the time and resource limitations as well as the required data for the study six urban poor settlements were identified among the different types of urban poor settlements in the city under the study. In identification of these case study settlements some key considerations such as the type of settlements, location, size and their proximity to city major activity centres and the availability of public transport were used. After identifying the six case study settlements, 20 households from each settlement were chosen for the interview.

In identification of these households, the factors such as number of members in the household (five or more), the number of members engaged in daily travel were considered.

Typical findings from the household surveys were:

- On an average a household has 6 members of whom a minimum of 3 persons were going out for daily activities, a majority of whom use public transport mode for travel to from their work place.
- Most of the women work as housemaids in middle and high-income households located in proximity to the settlement. The women also used to walk to their places of work.
- A majority of men work as skilled workers in the city's establishments such as restaurants, cleaning companies with contractors and repair workshops. They use public transport as their work places are located about 5 to 6 km away from the settlement.
- Majority of respondents have indicated that for serious illness they used to go to the general hospital of Colombo and children's in hospital in Borella both of which are located about 06 km away from the settlement. For brief illnesses they used to visit the municipal dispensary which is about 1 km away from their settlement.
- Majority of the community people who working in the city centre use public buses for their daily travel.
- The main reason for choosing public buses was there was no other alternatives for them. In the meantime, they have mentioned that the bus fares are reasonably low.
- Difficulty of catching buses during the morning peak hour's result in late arrival at work places.
- Those who work on night shifts find it difficult to come back home due to non-availability of buses in the night. In such situations, they have no other option but to hire a three wheeler, which costs about Rs. 100, which is twenty times the usual bus fares.
- Most of the activity centres are located in close proximity to Swarna Road settlement and therefore the people feel comfortable in accessing these services. Particularly, the schools, markets, post office and hospitals were such closely located centres to them and employment places for women. Therefore, the Swarna Road community has indicated that they are lucky enough to be in that location except that the emerging social problems and deteriorating local environmental quality.

Questionnaire surveys are straightforward in their design, because they use pre-determined questions, but there are however a few guidelines that will aid the selection of a survey team and conduct of surveys:

- Enumerators should comprise both men and women, to reduce sample gender bias, and should have a minimum Grade 12 level of education. High school leavers or undergraduate students are ideal.
- It is critical that enumerator's undertake training prior to the surveys to ensure they are capable of recording information correctly and to a consistent standard. Piloting of questionnaires aids the training of enumerators because it gives them 'on-the-job' experience. The household questionnaire should be accompanied by guidelines that describe in detail how the questionnaires should be correctly completed.
- Enumerators should practise building a rapport with respondents before filling in the questionnaires by briefly asking questions about themselves and their family, to 'break the ice'.
- Enumerators should avoid putting words into the mouth of the respondent and not assume that respondents always know the answer to questions asked of them.
- Enumerators should carry an official letter, typed on headed paper and endorsed by the local authority or relevant government ministry, explaining the purpose of the survey and identification of the enumerator.

#### **Box 6: Use of travel diaries in Colombo**

A household travel diary was used to collect information related to the travel pattern of a particular household within a period of continuous one-week. The checklist included the following attributes;

- Basic household data, name of the settlement, address, name of head of household, no. of members of household, no. of members who engaged in daily travel
- For each member the following information was collected. – date, trip purpose, start time, distance to the destination and mode of transport
- Normal time required to reach the destination, the actual time taken, the waiting time for transport
- Cost of transport, any problems faced during the travel, how those problems affected the user and user's opinion on the transport mode used

In the six case study settlements, five households each were identified for collecting information on a travel diary of the members of the household. In identification of these families, some basic criteria such as number of members in the household, number of members engaged in daily travel, the transport mode they used etc. were used. Accordingly, about 93 members were interviewed in 27 households (3 households in Seevalipura did not respond properly due to some family problems).

In the 27 households, a total of 93 members have provided the travel diary information as per the format developed by Sevanatha. The travel diary information was processed using Excel package and some basic findings are as follows.

- Average number of trips made by a family member in each settlement was between 2.0 to 2.5 per day.
- Average distance travelled by a family member was minimum 7.11km and maximum 16.09 per day.
- The average cost spent per km distance was found to have been between 75 cents to Rs. 1.37 per person per day. Thus, on average Rs. 15 per day per member was spent on travelling which would be about Rupees 300 to 315 per month (excluding Saturdays and Sundays) per member of a household. When two members are of regular travellers this would be about Rs. 600 to 630 per month per household, which may be around 10% of average household income of the respondent families.
- It was also observed that there was a significant difference between the average normal travel time, which people expect and actual time spent for their travelling. The minimum time difference was recorded in the case of Bakeriyawatta settlement, which was about 12 minutes, but in the case of Seevalipura settlement people have spent about 25 minutes than what they normally perceive as required travel time.
- It was also revealed that Seevalipura and Badowita settlements have relatively fewer advantages since the community members have to spend more time and money on their daily travel. In all other settlements there was not much variation in terms of the distance travelled, time and money spent by the community members.

#### **2.3.3 Detailed activity analysis at household level**

A limited number of households (perhaps twenty in each case study) should be studied with the purpose of establishing in some detail how activities within the household are organised and managed. This survey will help identify where decisions on transport play a critical role in achieving activity goals.

The household members should be asked to relate their activity patterns to livelihood activities, and the role that transport plays (or does not play, as the case may be) in fulfilling these activities.

This survey feeds on the information that has already come from the focus group discussions, as well as the understanding built up concerning household travel and the transport sector capabilities.

**Box 7: Activity Patterns, Transport and Policies for the Urban Poor-Case study of Colombo, Sri Lanka**

**Checklist for Household Travel Diary**

(used for continuous 07 day period only)

Background information

Name of the settlement: \_\_\_\_\_

Address of the settlement: \_\_\_\_\_

Name of head of household: \_\_\_\_\_

Household identity number: \_\_\_\_\_

No. of members in the household: \_\_\_\_\_

No. of members who are engaged in daily travel: \_\_\_\_\_

**Box 7 (cont): Travel Diary Form**

(one sheet must be completed for each identified household member)

Serial No.: \_\_\_\_\_

Relationship to Head of HH: \_\_\_\_\_

<b>1</b> Month / Day	<b>2</b> Trip	<b>3</b> Purpose	<b>4</b> Start Time	<b>5</b> Distance to Destination (km)	<b>6</b> Mode of TP & Distance (km)	<b>7</b> Usual Time Required (Hrs/min)	<b>8</b> Actual Time Taken (Hrs/Min)	<b>9</b> Waiting Time (Hrs/Min)	<b>10</b> Amount Spent (Rs.)	<b>11</b> Problems Faced during the Trip	<b>12</b> How were you affected	<b>13</b> Overall Satisfaction of the TP Mode
<b>1</b>												
<b>2</b>												
<b>3</b>												
<b>4</b>												
<b>5</b>												
<b>6</b>												
<b>7</b>												
										1. Bus broken down 2. Traffic congestion 3. Delay of bus arrival 4. Accident 5. other	1. trip got delayed 2. Time lost 3. Waste of money 4. Distress 5. Not severe	1. Fully satisfied 2. Satisfied 3. Indifferent 4. Not satisfied 5. Frustrated

The outcome from this investigation is:

- A clearer picture of what constraints and influences the existing transport system imposes on household activity patterns,
- The extent to which these are important (within a livelihoods framework),
- Hence (with a knowledge of how the transport system functions, and the opportunities for change) the extent to which changes could be made to the transport system in order that it could better serve household needs.

## **2.4 Methodological constraints**

The process of undertaking consultation, whether through formal questionnaire surveys or participation is rarely conducted without complication. Survey constraints and obstacles are characteristic of the decision making process and should be accounted for with contingency planning. The following study constraints indicate typical problems that can be avoided with sufficient forethought and planning, and Box 8 gives some examples from Harare.

### **2.4.1 Political-economic environment**

In a country affected by political tension and economic hardship, stakeholder consultations can be difficult to implement because people are less receptive to external interference and their trust of people in power is thwarted. Whilst it is important to demonstrate that the survey has the support of an authorised institution, it may be that the prevailing political environment prevents endorsement of the surveys by a government body for which the local community has an inherent mistrust.

### **2.4.2 Logistics of stakeholder consultation**

It can be problematic inviting people to attend public consultations and keep them interested, because they are providing time that could otherwise be spent on more economically productive activities. Equally, without sufficient incentive, it is often difficult maintaining people's interest at meetings. It is crucial that people's expectations aren't unnecessarily raised by promising elaborate interventions that will resolve transport problems for everybody. Participants should be given a detailed account of the planning process, including any surveys that may be required.

Whilst the provision of incentives can help to captivate interest for the duration of the exercise, it is important that these are appropriate to the meeting such as refreshments, or a token of appreciation. Financial incentives should be avoided as they may bias responses of candidates and be construed as a bribe. In order to give respondents ownership of the decision making process they must be willing to give their time of their own volition and make contributions without any artificial enticement.

### **2.4.3 Venues and equipment for meetings**

Community consultations often require meetings at locations (such as informal townships) which do not have the facilities to conduct interviews and forums with a large number of people. In these instances, it may be necessary to hold consultations outside.

Similarly, there may not be sufficient materials to carry out visual participatory appraisal techniques such as flip chart paper or chalk boards. In this instance, natural



materials can be used as markers including leaves, beans, seeds and stones, using sticks or charcoal to write on the ground.

#### **2.4.4 Timing of consultations**

The timing of consultations is critical in ensuring that a sufficient cross-section of the community attends, and that no particular group is over represented. For example, women and children may not be able to attend meetings at certain times in the evenings. Some groups, such as youths, women, disabled people or worker's groups may have society or club activities that clash with planned consultation events. Also, there will invariably be periods of the year when certain demographic groups will not be available, such as during school holidays or examination periods, religious activity, elections, general strikes or specific strikes when transport service unions cause city-wide disruption.

#### **2.4.5 Avoiding distractions**

For the conduct of both quantitative and qualitative surveys, unnecessary distractions should be avoided at all costs. Mobile phones and alarms should be switched off, surveys should not be conducted during prayer time, or at times when local activities are heightened, for example festivals, weddings and funerals. Respondents contribute a considerable proportion of their time to participate in surveys, and if their time is wasted they will be less receptive to answering questions, or being involved in subsequent surveys or feedback sessions.

#### **Box 8: Methodological constraints encountered in the Harare case study**

##### **Political-economic environment:**

In Zimbabwe, focus group discussions proved difficult to arrange in some communities, as political overtones and overwhelming economic hardships affected participants' energy levels. The economic problems and the general decline in social services as evidenced by shortage of drugs in health clinics for instance made it difficult to focus discussion on transport issues as the latter has now become a luxury in Harare. Meetings were also misconstrued as political devices; hence attendance was often low.

##### **Logistics of stakeholder consultation:**

A common expression used in Zimbabwe was "zvinechibhanzi here?" literally to mean "what is in it for me?" Surveys undertaken in the planning process often do not bring about implementation of policies or tangible interventions, or worse result in 'white elephants'. Communities should not be under any pretence that they will receive any direct benefits from the surveys.

##### **Timing of consultations:**

In Harare, when school children were involved in consultations, the Headmasters were very co-operative, despite sessions coinciding with examinations at two schools. The behaviour of pupils related to the timing of sessions with non-exam sessions benefiting from "sober" participation while exam sessions were at times characterised by over-excited pupils speaking at the top of their voices and at times inaudibly.

## **3 TRANSPORT PLANNING FRAMEWORK**

As has been discussed earlier, transport is a necessary input to urban life, providing the means of access from home to activity. This dependency means that the nature of transport facilities must have an inevitable impact on the performance of other sectors; it is also apparent that transport plays a key role in people's lives providing them (with varying degrees of success) with the access to opportunities. This chapter looks at transport from both perspectives, indicating how transport may be assessed in both roles (i.e. for cross-sectoral effectiveness and for meeting activity requirements).

A mechanism for assessing the effectiveness of the transport system is through the use of indicators. These are addressed more fully in Chapter 4 in respect of the transport-poverty impact analysis. This chapter looks to establish the issues involved, and how transport policy might be developed to address them.

### **3.1 Cross-sector issues**

#### **3.1.1 Background**

The focus on poverty relief has been accompanied by new vehicles for analysing and targeting the needs of the poor. The international development targets and Millennium Development Goals (MDGs) have been derived to concentrate aid efforts, while Poverty Reduction Strategy Papers (PRSPs) embody the poverty aims and mechanisms of countries, and are based on the Sustainable Livelihoods Approach (SLA), rights analysis and poverty audits. These approaches are cross-sectoral and gender sensitive in nature.

In this context, transport takes a relatively low profile as it is seen as a service input to the achievement of goals in the more obvious contributors to poverty relief, like health care, education and employment. Sometimes it is explicitly acknowledged, though more often it is implicitly assumed in the need to create greater access (e.g. to employment opportunities, agricultural development, social inclusion and networking).

Thus transport development (however measured) is not of itself one of the MDGs. It is subsumed within the other goals; this despite its obvious pervasive influence on the efficiency and effectiveness of all other sectors, its contribution to economic growth and its importance in terms of government spending (one of the largest components of the investment budget being the roads programme). Partly this may be due to the fact that much transport development (that associated with transport operations) is controlled by the private sector, and partly it may be due to the difficulty that has arisen in the past of unequivocally demonstrating the link between transport development and poverty relief.

#### **3.1.2 Cross-sector impacts**

Some of the cross-sector influences in which transport plays a part have already been indicated in Table 2 (at the macro-level). Table 3 gives more detail for specific sectors.

**Table 3: Transport cross-sector links.**

Sector	Issues which impact on transport
Health	<ol style="list-style-type: none"> <li>1. Health-care facilities and location policy. A key issue for transport provision concerns the types of facility, frequency of use, and ease of access by users. The cross-sector trade-off is likely to be between facility size (and the economies that can be gained by the health-sector from larger size) and proximity to users (who must increasingly rely on expensive transport, the further they have to travel)</li> <li>2. Another dimension to this trade-off concerns the ability to provision the facility; in particular, it may be harder to staff a large, more-centrally based facility, than a number of smaller units which are more dispersed and easier to access</li> </ol>
Education	<ol style="list-style-type: none"> <li>1. The issue for education is very similar to that of the health sector, the trade-off occurring between size of school facility and ease of transport access. Access for pupils and staff. (Some teachers are forced to go to the centre and then come back out again i.e. routes run in and out but radial routes are not common, which affects the central versus dispersed question)</li> </ol>
Formal employment	<ol style="list-style-type: none"> <li>1. The location of employment opportunities with respect to community dwellings is crucial to the levels of transport needed to get commuters to and from work</li> <li>2. Transport also provides an employment opportunity. In the formal sector, opportunities may be limited because of reaction against public sector involvement in transport operations, and the non-competitiveness of 'big-bus' operations</li> </ol>
Informal employment	<ol style="list-style-type: none"> <li>1. Informal employment is often concerned with trading activities, and the special needs of traders to access urban markets</li> <li>2. The informal transport sector is a very large source of employment for unskilled and semi-skilled workers</li> <li>3. Transport operators can be insensitive to these groups as their goods can be seen to be taking up seats/room. They are then forced to hire vehicles at several multiples of the bus fare</li> </ol>

In general, cross-sector issues are about location and travel distances for those who need to access facilities. In many instances there is no significant problem: for example, the logistics of health-care may be based on the provision of community clinics as the first point of medical attention (as in Harare - see Box 9). In this case, the clinics are located within walking distance of most of the community. Of more concern is the problem of referral to a major hospital (which are few in number in any city), particularly in an emergency (due to accident, for example).

Access to primary education is also likely to be well provided, in that primary schools are usually community-based. Transport problems increase at secondary level, when students will be expected to travel longer distances, either because secondary schools are fewer in number, or because the students choose to travel a longer distance to a school of choice. Apart from the traffic safety implications of large volumes of student travel, there is also an excessive burden on transport operators, which engenders other problems; discrimination by private operators of public transport against students is often widespread (see Box 10).

**Box 9: Location of health-care facilities in Harare**

In Harare, health-care facilities are organised by the local authority (City of Harare), Central Government and the private sector. The City of Harare provides most of the clinics in the residential areas, which are used by the poor. The central hospitals, which are used as referral centres are run by the Ministry of Health. Private sector hospitals and clinics are mainly used by more affluent people and are clearly unaffordable by the majority of residents living in the six areas under survey.

Since independence in 1980, the Government of Zimbabwe has made tremendous strides towards improving access to health services for the population. Government's approach was guided by "equity in health" which placed emphasis on health need rather than "ability to pay". As a result of the expansion that took place after independence, 85% of the population live within 8 kilometres of a health facility.

The City of Harare now has 8 ambulances that are operational out of a fleet of 40. The replacement of ambulances has been erratic and most of the poor sections of the community are no longer covered by emergency health services.

The Workshop that assessed the project outcomes identified the transport problems (of health-care) as lack of direct links from clinics to hospitals and inadequate public ambulances. In respect of solutions they suggested the provision of staff buses by employers. Survival strategies included walking which was burdensome and hiring of private transport in cases of emergency that was very expensive.

**Box 10: Education and transport in Harare**

The number of both primary and secondary schools have increased at an unprecedented rate since the attainment of independence in 1980. Expansion took a number of forms and these included building new schools, running two sessions a practice commonly known as "hot sitting" and introducing more streams in existing schools. During the same time, Government declared free education in primary schools that also increased enrolment. A study established that schools that are served by poor transport links and poor housing were often shunned by teachers and hence affecting the quality of education at these schools due to absenteeism.

Government encourages pupils to enrol at the nearest schools to their homes. This used to be applied through a zoning system as a Ministry of Education policy but in an endeavour to avail choice to parents and pupils, the policy is no longer being enforced.

The Stakeholder Workshop identified the transport problems (relevant to education) as safety, the need to interchange, and high fares for school children who may be forced to walk. Suggested solutions were:

- Need for public awareness campaign and law enforcement in terms of safety for commuters.
- Provision of contract service for school pupils and to expand the capacity of schools in order to reduce walking distances
- Need to subsidise fares for children in order to make them affordable.
- Need for a substantial increase of transport allowances for teachers

Survival strategies included selling sweets, pop corn, etc in order to supplement income.

### 3.2 Users' perceptions of transport

Users' perceptions of transport often reflect their journey purpose, but also personal attributes (like gender, disability and age) and choice available (with, for example, more isolated communities being particularly vulnerable to limited services and access opportunities). User perceptions are inevitably highly subjective and often very intolerant of the logistical problems of providing transport services; in general, no transport system could meet every conceivable requirement of all users. Even so, there are likely to be very many common (and probably negative) perceptions of transport that should be addressed and accommodated in policy development.

Typical perceptions of transport related to some main journey purposes are presented in Table 4, which also identifies how perceptions may vary with user attributes.

**Table 4: User perceptions of transport**

Key transport issues	Influence of personal attributes
Poor service of public transport (quality and quantity)	Specific problems for women, who may only be able to travel at off-peak times when transport capacity is reduced. The elderly, disabled and women may find the quality of travel conditions very difficult.
High cost of using public transport	The poor may have little capacity to pay for public transport fares on a regular basis. Women and children may well be last in the allocation of scarce household budgets (i.e. priority goes to the income earners)
Indiscipline of transport personnel	Drivers and their mates often restrict student travel (where students insist on paying half-fare) Disabled are abused and ignored. Elderly and infirm harassed for what is seen as taking too long to board/alight Females harassed by personnel and passengers
Road safety hazards for pedestrians and cyclists	Students are particularly at risk in travel to school, but all pedestrians and cyclists will encounter serious safety problems.
No provision for disabled	The disabled find travel particularly onerous; the position is made worse by the lack of awareness and training of staff to assist such passengers.
No clear policy (or champion) towards transport development	The problem crosscuts all individuals in that there is no obvious redress or platform (to voice their concerns) for those who suffer from the bad performance of transport, and where there is, staff have appeared derisory, and not followed up claims.

These perceptions (often in different guises) surface again and again in participatory work. Figure 2 illustrates the relative importance of access to main 'activity centres' (in this instance employment, health, education and markets), to different settlements in Colombo, whilst Boxes 11 and 12 show how transport is critical to employment (both formal and informal) in Harare. Box 13 indicates the recommendations by stakeholders in Colombo, which stress the need for proximity of services, and continued stakeholder involvement in planning. Table 5 illustrates (with an example from Accra) in very clear terms just how important transport is for the livelihoods of disabled people; inadequate access to transport adds to their vulnerability.

**Figure 2: Illustration of Activity Centres Used by the Communities of Case Study Settlements**

Name of Settlement	Location of Main Activity Centres																			
	Employment					Health					Education					Markets				
	1 Centre	2 Centre	3	4	5	1 Muni. Disp.	2 Govt. Hosp.	3 Pvt. Disp.	4	5	1 Centre	2 Centre	3 Centre	4	5	1 Public Market	2 Mobile Vendor	3 Boutique	4	5
Swarna Road Stage II	●	●	●	●		●	●	●	●		●	●	●			●	●	●		
Badowita Settlement	●	●	●	●			●				●	●	●	●		●	●			
Bakeriya Watta Settlement	●	●	●			●	●	●	●		●	●	●			●		●		
Seevalipura B Settlement	●	●	●	●	●	●	●				●	●	●	●		●	●	●		
219 Watta Settlement	●	●	●			●	●	●	●		●	●				●		●		
Nawagampura Block E&D	●	●	●				●	●			●	●	●			●	●	●		

Note: Size of the circle denotes the importance of the activity centre for use by the community centre (Not to scale)

**Box 11: Informal employment and transport in Harare**

In Harare there are diverse similarities and disparities in informal sector livelihood activities employed in the six study areas. Buying and selling of fruits and vegetables, trading in second hand clothing, crop production and the operation of “tuckshops” is practised in all the six areas. Firewood is traded in all areas.

Transport is critical to the pursuit of livelihood activities of the poor in Harare. Most of the commodities traded are bought from Mbare (5 kilometres from the CBD) where the largest fruit and vegetable wholesale and retail markets are located. Traders acquire their fruits and vegetable products from Mbare.

While Mbare remains the main trading focus by those engaged in the informal sector, it is important to note that trades such as sourcing of planks for furniture making, paraffin, grocery for tuckshops and old clothes do not have specific predictable destinations. Thus, traders involved can spend long periods travelling. The situation is compounded by the general shortages of some commodities on the market such as cooking oil, maize meal, and sugar.

**Box 12: Transport problems of formal employees in Harare**

Problems identified by the Stakeholder Workshop:

- No assistance by the employer in providing transport to the employee.
- Lack of public transport infrastructure.

Solutions suggested included:

- Introduction of travelling allowances for all employees. Apart from providing employees with money, schemes such as assistance in the purchase of a bicycle need to be put in place
- Integration of existing rail service with road transport systems. The existing rail/bus commuter service is in theory integrated. ZUPCO has failed to provide the requisite feeder service. The emphasis need not be with ZUPCO buses only, but other operators should be included
- Need to create citizen awareness and to challenge the combi operators improve public relations. Passengers are by and large not aware of their rights.
- Need to make customer care courses mandatory for public transport crew. Before a driver or conductor can be employed in public transport industry, the incumbent should have completed a recognised customer care and public relations programme.

**Box 13: Recommendations for policy consideration in Colombo**

Policy recommendations identified by the stakeholder workshop:

- When improving or relocating urban poor communities, in addition to basic amenities, they should be provided with public transport facilities either to their community or at a convenient walking distance (preferably within ½ to 1 km maximum).
- Location of market places and dispensaries within 1 to 2 km distance from an urban poor neighbourhood is acceptable to the poor provided there are access roads of reasonable condition.
- Location of work places, particularly for women, need to be within 3 to 4 km radius of their communities. The time and money expended on travel for such distances has not proved to be a problem for many workers.
- Public buses should be operated on a fixed time schedule and measures should be introduced to stop unnecessary congestion at junction centres. School buses should be provided to urban poor communities as an incentive for the children of urban poor communities to attend school.
- It was clear that the perceptions of the poor have not been considered in formulating policies for providing public sector services. Therefore, public forums and opinion polls must be organised by service delivery organisations in order to obtain people's perceptions on the services they provide in order to better serve the needs of the people.

**Table 5: Livelihoods issues facing people with disabilities in Accra**

People with disabilities	Physical capital	Human capital	Social capital	Natural capital	Financial capital
Walk with difficulty	Discrimination in access to housing and other facilities  High transport cost  Discrimination in access to public transport  Poor public service for disabled – no space on trotro’s for wheelchairs  Absence of tactile surfaces ie. ‘blister paving’ at road crossings	Poor access to health services	Lack of help from Government	Unable to move around during rainy season.	Difficulty in securing employment
Cannot walk at all		Poor access to education	Poor public sympathy		Access to credit very difficult
Use a wheel chair		Unemployment	Discrimination by transport owners (trotro)		High expense for transport
Speak and walk with difficulty			Neglect by family		
Cannot hear well or at all			Difficulty gaining employment		
Visual impairment					

### 3.3 Presenting the case: addressing the issues

As indicated earlier, the information collected from transport-activity analysis is used to support development in transport policy. Allied to this may well be the need to develop the institutions charged with executing policy, through both re-structuring and capacity-building processes. New cross-sectoral processes may be needed to deal with some of the issues; for example, the question of student bus-fares (whether they should be subsidised) is one for education authorities to resolve, and should not be a burden on bus operators. Providing access and better facilities for the disabled is an issue which may have to be shared between sectors, but with the health sector taking a lead.

In presenting the information from transport-activity analysis it is clearly important to involve all cross-sectoral interests from the outset. Box 14 indicates the very extensive range of stakeholders that were involved in the participatory work in Accra.

**Box 14: Stakeholder analysis in Accra**

The identification of a research team, research sites, stakeholders and methods used, aimed to set a tone for a research approach based on notions of participation, inclusion and consensus building. Thus, ‘methods’ included building an effective team with shared goals, where the team’s diversity was embraced. In our context, diversity included ethnicity, language, gender, seniority, age-range, professional experience, local and outside knowledge. All of these led to different thoughts and ideas about the work that proved valuable to the team’s process and to the research outcomes.



Stakeholders were considered in three groups: transport users, operators and regulators. A fourth group was soon added, which we called simply 'other stakeholders.' Of course, operators and regulators could be considered transport users as well. In general, though, in line with the project's focus on poverty and vulnerability, we concentrated on 'users' as being poorer people in poorer communities, and vulnerable groups.

The following groups were identified from within each of the communities:

- Women
- Men
- Opinion leaders
- Youth (mainly unmarried people from post-school age to late 20s)
- Citizen-based organisations (CBO)
- Vulnerable groups
- Older school Children (girls and boys between ages 12-15)
- Younger school children (girls and boys between ages 6-8)
- People with disabilities

*Transport Regulators*

- Ministry of Roads and Transport (initially Ministry of Transport and Communications before government re-organisation)
- Town and Country Planning Department
- Department of Urban Roads
- Accra Metropolitan Roads Department (AMRD)
- Ashiedu-Keteke Sub-Metropolitan Assembly
- Ablekuma Sub-Metropolitan Assembly
- Accra Metropolitan Assembly (AMA)
- Driver and Vehicle Licensing Agency (DVLA)

*Transport Operators*

- Transport unions (we worked with two, GPRTU and PROTOA)
- Government operators (we worked with one, CEPS)
- Private company operators (we worked with one, Barclays Bank)

*Other Stakeholders*

- Ministry of Education, Accra Education Department, Education Officers and Teachers
- Accra Traffic Police (MTTU)
- Ministry of Social Welfare
- National Road Safety Council
- Department of Feeder Roads (DFID Support to Rural Feeder Roads Project)
- DFID Rural Livelihood Office in Accra
- Other COMPTRAN departments
- Academic researchers

In general, research methods were based on facilitated discussions with individuals and groups. In communities, a variety of Participatory Analysis (PA) tools were used. Semi-structured interviews (SSI) were also used with key community informants but SSIs were mainly used with individuals and groups among regulators, operators and other stakeholders.

While stakeholders need to be involved and carried from conception to implementation, there is also a need for a 'champion' to own, promote and push the programme. Typically in the urban context this would be the local transport authority (which may be a department of the local authority); but one or more of the central ministries might also have a strong interest or claim to ownership. Given these varied interests, there are inevitable sensitivities that need careful resolution. In any event, a persistent problem in most third world cities is the lack of relevant expertise (in urban transport development), and hence a difficulty in identifying a suitable champion. The problem is further exacerbated by funding constraints, and the general lack of priority given to urban transport. Clearly there are a number of institutional issues that need

addressing and resolving if anything positive is to come from transport-activity analysis.

## **4 A TRANSPORT - POVERTY IMPACT ANALYSIS AND AUDIT**

### **4.1 Outline**

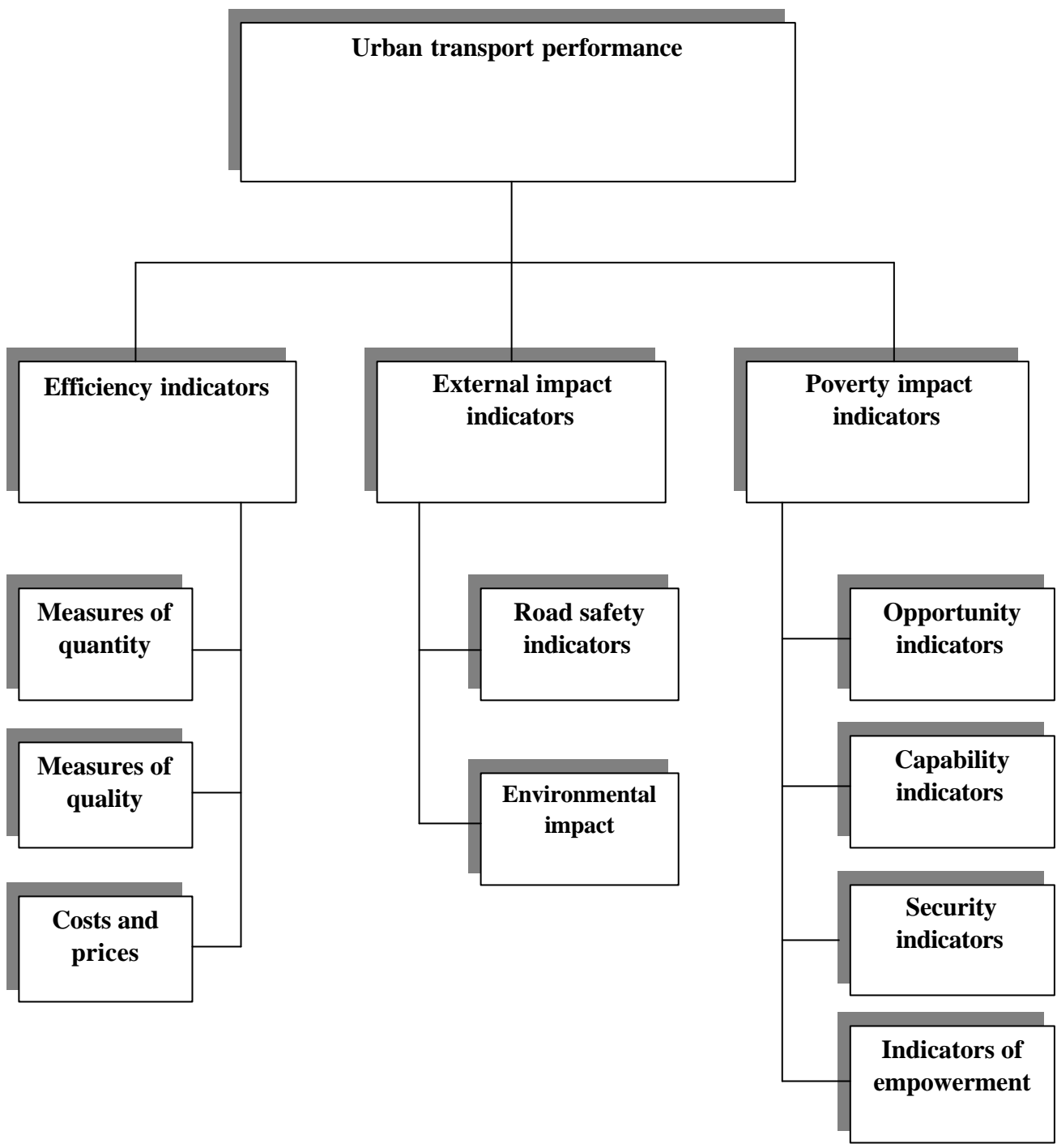
This section outlines the general purpose and need for auditing urban transport projects, and then focuses on the specific requirement for poverty auditing. It relates to the foregoing guidance in that it draws on an understanding of how poor people make use of transport, both directly in their needs to access opportunities and facilities, and indirectly in the way that transport contributes to the performance of other sectors.

An aspect of the auditing process is the use of indicators for measuring transport performance, and hence establishing targets. Figure 3 gives an overview of the indicators that can be used to measure transport performance. Clearly, efficiency embraces the attributes of supply (the amount and the cost) and the effectiveness (the quality and the degree of user-satisfaction) of the services on offer. But there are other dimensions of transport performance largely reflecting its externalities and impacts. Transport impacts on safety risks and the environment; it also impacts on poor peoples' livelihoods (because, as described in Table 1, it can influence an individuals access to opportunity, capability, security and empowerment).

While the problems of travel, congestion and pollution are tangible and quite apparent to transport operators and users alike, there is often little objective measurement of the nature and impact of these problems. In traditional transport analysis, the need for such a quantitative assessment is important for the following reasons:

- To clearly establish the performance of the transport system, and in particular where, how and why it is failing.
- To help identify possible remedial actions and priorities for implementation.
- To provide a base line against which to monitor the impact of remedial actions in particular and trends in general.
- To provide basic data for longer term strategic planning.

With the changing emphasis in the measurement of performance to include not only physical output (i.e. the ability to meet demand effectively and efficiently) but also social, environmental and poverty impacts of a transport intervention, there is a need to take account of these factors, and hence to ensure safeguards and mitigation programmes where performance, measured in these terms, is ineffective and damaging.



**Figure 3. Transport performance indicators**

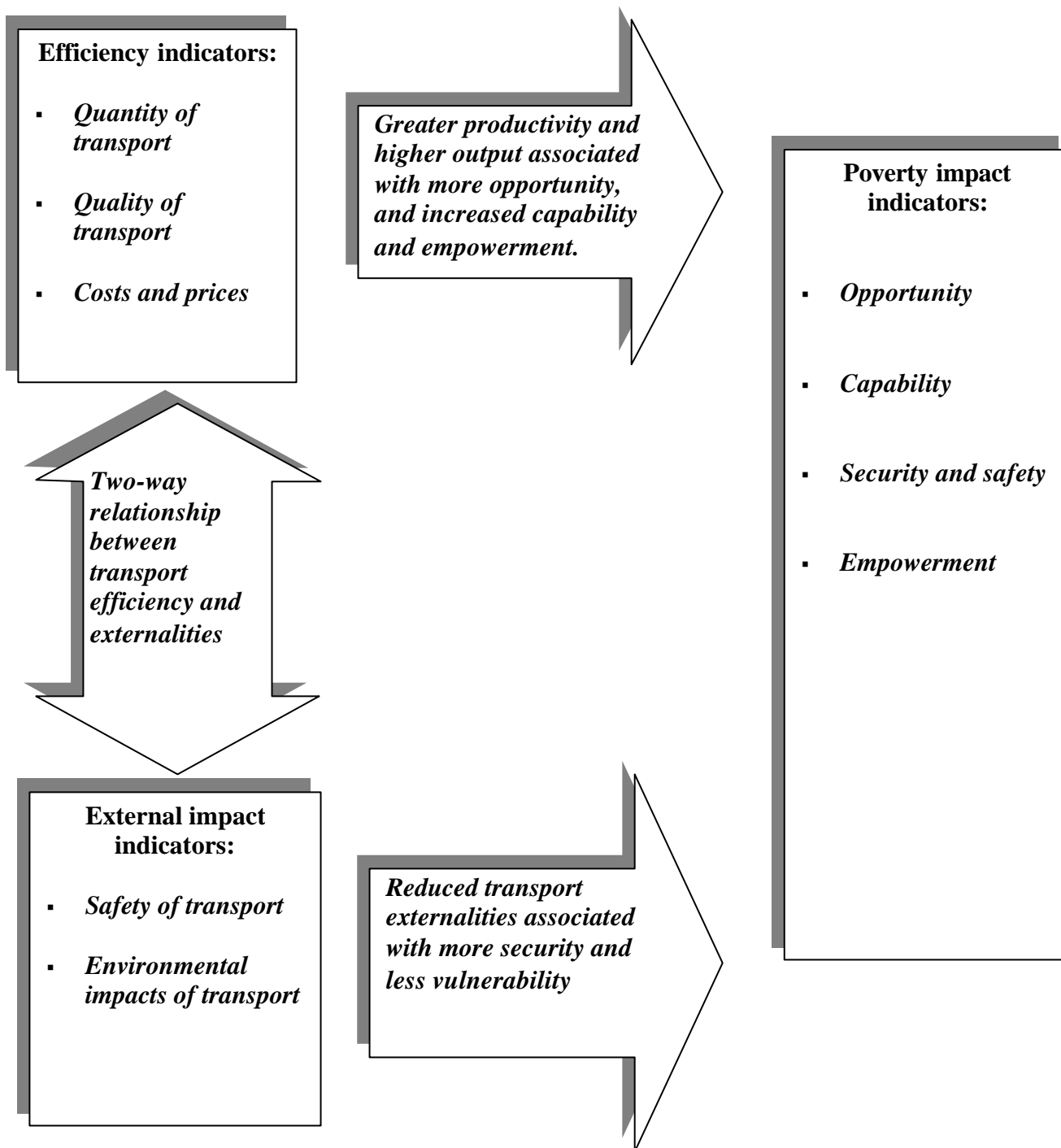
## 4.2 The relationship between indicators

The relationship between transport and poverty has already been explored in Section 1. Clearly transport has an important impact on poverty, and hence the efficiency and externalities of transport must reflect this impact. Figure 3 graphically demonstrates the close correspondence between the indicators used to measure transport performance.

The two-way relationship between transport efficiency and externalities rests on the presumptions that:

- Better quality (both through technological advance and better regulation of the sector) of transport will be safer and less polluting
- Improved safety measures and environmental controls will yield a better quality of transport

Both improved efficiency and reduced environmental externalities will impact (as shown in Figure 4) on poverty through the mechanisms suggested earlier in Tables 1 and 2. The exact nature and quantification of these mechanisms is largely indeterminate; but this guide advances the view that positive improvements in the recommended transport-poverty indicators (i.e. those transport indicators that seem to relate closely with poverty impact, as discussed below) represent an improvement in poor people's livelihoods.



**Figure 4. The relationship between transport performance indicators**

## **4.3 Auditing transport efficiency and externalities**

### **4.3.1 The principles**

The purpose of this audit is to establish the current status and performance of the sector, to identify strengths and weaknesses and to determine trends in output and resource consumption. Effectively the performance indicators, generated by an urban transport database, can provide the required information for undertaking an audit. (Table 6 gives examples of the indicators that can be used.) Thus the selected performance indicators provide a basic framework for an audit, and the targets provide the guidance as to necessary developments. Targets must be tailored to the individual city. Cross-national and international comparisons provide useful benchmarks, but account has to be taken of local conditions and constraints.

Comparative targets also need to be based on cities of a similar size and state of development. Where targets based on comparative data cannot be established, the audit should try to establish targets which take account of historic data, objectives, and productivity potential.

Targets are not always appropriate, particularly if the performance indicator is not "policy-driven". Even in these cases, however, comparative data may be helpful for the audit, showing whether a city has inordinately different urban transport characteristics than its peer group. Such differences may be entirely acceptable and explicable; conversely they may help identify a need to introduce policies for restructuring the urban transport sector.

Apart from the comparative analytical aspect, an audit should also track the performance indicators over time to show whether improvements are being achieved and at what rate. Because a city's characteristics are changing over time (higher population, more wealth, etc.), the target performance will need to be changed. Some account must be taken of this situation when monitoring trends.

### **4.3.2 Databases and indicators**

To furnish information on a comprehensive basis requires major survey work that is likely to involve significant consumption of resources. These cannot be mobilised on a regular and frequent basis; the periodicity of a major transport study for a city may be as low as every 10-15 years, with perhaps small ad-hoc studies addressing particular transport issues at irregular intervals between. These circumstances dictate that the maximum use is made of the available information that is collected through these studies. This can be achieved through two related paths:

- Collating the existing information by means of a comprehensive urban transport database.
- 'Infilling' the irregular survey material with performance and safeguards data collected through small-scale sample surveys undertaken at regular and frequent intervals, and on a consistent basis.

While the latter sample surveys cannot provide the basis for developing specific remedial actions, they do fulfil the need to monitor general trends in transport performance. A small set of performance and safeguards indicators, which use

information from the sample surveys, can be used to track development (overall growth in traffic, changes in traffic speeds, changes in trip characteristics, etc.) and hence provide a basis for up-dating historic transport information, and for identifying the need for more detailed studies on specific issues.

### **4.3.3 Ex-ante and ex-post**

Indicators are a useful ex-post mechanism for tracking performance and impact resulting from a transport intervention. They can also usefully point to deficiencies which need attention, but do not necessarily help in understanding what the impacts of a transport intervention might be (ex-ante). In this context, specific surveys and enquiries will be necessary to help determine likely outcomes. This is particularly relevant in respect of what the poverty impacts may be.



**Table 6: Key urban transport efficiency indicators**

<b>Indicator</b>	<b>Purpose</b>	<b>Description</b>	<b>Target</b>
Road Accidents	To gauge magnitude of road safety problem	Total injury accidents (absolute and per vehicle) and percentage change over time	Accident rate no worse than peer group of similar cities, and a positive, sustained and significant downward trend
Passenger Service	To determine quantity, quality and trends in use of public transport	(i) Numbers of public transport vehicles/seats (absolute and per capita) (ii) Weighted average flow of public transport vehicles on inner/outer city roads (iii) Weighted average waiting times at key sites  (iv) Weighted average journey times on key routes (v) Complaints per users (possibly leading to loss of franchise)	(i) Numbers should be comparable with cities of a similar size, population composition and transport characteristics; Trend should not be negative (ii) No specific target; for monitoring only  (iii) Waiting times no worse than 20 min in peak on high frequency routes; trend should not be negative (iv) Overall journey time should not be more than 3 hours per day (v) Numbers should be comparable with other similar cities (there will always be complaint what level is unacceptable)
Roads Performance	To determine level of congestion	(i) Road kms. (absolute and per unit area)  (ii) Weighted average vehicular speeds on inner/outer roads during peak  (iii) Weighted average peak-hour flows on main corridors	(i) Numbers should be comparable with other similar cities; trends should not be negative (ii) Inner city roads should have peak-hour speeds in excess of 10kmph; trend should not be negative  (iii) No specific target; for monitoring only
Vehicular Fleet	To indicate growth in demand	Numbers of working vehicles (absolute and per km. of road and per capita)	No specific target; for monitoring only
Transport Prices	To indicate trends in cost of transport	(i) Average public transport fares for fixed distances (ii) Price of fuel (iii) Average price of vehicles (iv) Road fund if present (v) Licensing/franchise cost if present (vi) MOT or equivalent if present	No specific target; for monitoring only
Modal Choice	To indicate relative importance and development of different modes	(i) Number of vehicles by type (absolute and per capita) (ii) Proportion of trips undertaken by different modes of transport	No specific target; for monitoring only
Transport Emissions	To indicate the level of pollution caused by transport operations	(i) Levels of noxious gasses (carbon monoxide, carbon dioxide and nitrous oxides)  (ii) Levels of carbon particulate matter	As set out by local pollution control regulations

## 4.4 Poverty impact

### 4.4.1 Indicators

The indicators that are recommended for tracking the continuing impact of transport development on poverty are shown in Table 7. Each indicator relates to a particular attribute of poverty and establishes the degree to which the project component addresses that attribute.

In summary, the purpose of the indicators is as follows:

- *Opportunity.* The recommended indicators point to the availability and accessibility of the public transport service. Improvements are reflected in more capacity, better travel conditions, faster journeys, stable transport costs and/or outlays as a proportion of household expenditure
- *Capability.* These indicators point to the ease of access (in transport terms) to other life-enhancing facilities (health, education)
- *Security.* The indicators point to the safety of using public transport. Improvements will be reflected in reduced accident rates, and reductions in criminal activities.
- *Empowerment.* In this connection, the indicator is demonstrating the involvement of the poor in the design and planning process. In the longer term, this indicator needs modifying to demonstrate whether that involvement is effective.

Over time all the indicators and associated targets will need monitoring and modification to reflect experiences gained in their use. Particular changes to reflect gender nuances may, for example, be appropriate.

### 4.4.2 Checklist for assessing poverty impacts, ex-ante.

As already noted, indicators are useful for tracking historical and current performance, and hence trends. They do not necessarily help in the formulation of new interventions; poverty impacts may need to be determined using specific surveys and analysis.

Table 8 provides a checklist of the issues that must be addressed, and the principles and diagnostics that should be applied. Two items stand out for further attention: strategy development and stakeholder consultation.

An understanding of the linkages between transport development and poverty alleviation is still unclear. Thus the way in which the benefits of transport interventions are distributed is uncertain, and requires more research. The only thing that is certain is that particular interventions are likely to be pro-poor, because the limited evidence points in that direction. For example, the poor make greater proportionate use of public transport, and by virtue of their greater dependence on walking for access, are likely to be more highly exposed to traffic accidents. Interventions directed at these areas are likely to be pro-poor. At the same time there is a danger of developing pro-poor interventions which are economically inefficient, and in the long run damaging to the poor community for whom they were designed to

help. Government subsidies to public transport are an example of a pro-poor intervention that can seriously damage the efficiency of the public transport sector unless very well designed and controlled. To resolve these conflicts requires very clear objectives and strategic principles.

Stakeholder consultation is now critically important in any analysis of transport intervention. It is the mechanism through which the planning and development process should become informed of the expressed opinion, problems, needs and issues of the community (users) and the operators (suppliers) of transport. It is also the mechanism through which inclusiveness should be developed, giving a voice to the poor, the disabled, women, and others who may be currently excluded. In essence, it is the means of giving ownership of transport development to those most critically dependent on it.

**Table 7: Indicators of transport impacts on poverty**

Poverty measure	Attribute	Indicator	Purpose	Target
Opportunity (economic efficiency)	Productivity and availability	<p>Bus and rail:</p> <ul style="list-style-type: none"> <li>• Av. Seat kms available per capita</li> <li>• Vehicle av. speed (kmph)</li> <li>• Average annual daily traffic – service vehicles per day on low volume roads</li> </ul> <p>Ferry:</p> <ul style="list-style-type: none"> <li>• No. return trips completed per vessel per day</li> </ul>	To indicate the level of service being provided by public transport operators	<p>As a guideline for cities &gt; 2-3 m the daily seat km. per 1000 population will be in the range 0.2 – 0.5 m per 1000 population.</p> <p>Av. speeds of public transport in downtown areas should be in the range 10-12 kmph.</p> <p>Over time, the aim will be to ensure that the values do not worsen, and that they are broadly comparable to other similar cities (where such information exists)</p>
	Access and travel conditions	<ul style="list-style-type: none"> <li>• Average trip distance (km)</li> <li>• Average journey speed (kmph)</li> <li>• Number of interchanges per trip</li> <li>• Modal split (including walk)</li> <li>• Trip rate (daily trips per capita)</li> <li>• Carrying capacity (actual number of passengers over passenger carrying capacity of vehicle)</li> </ul>	To indicate the nature and conditions of travel	Over time, the aim will be to maintain and improve journey times, and to reduce the number of trip legs if possible (since they introduce additional waiting times). Average trip distance is a function of urban development, and is difficult to influence through transport improvements alone
	Travel cost	<ul style="list-style-type: none"> <li>• Average fare paid per journey</li> <li>• Total household expenditure on transport (as % of income)</li> </ul>	To indicate the significance of transport costs in household budgets.	
	Employment	<ul style="list-style-type: none"> <li>• Numbers employed in sector by mode</li> <li>• Av. Monthly income per employee</li> </ul>	To establish the dependency on transport as an employment sector	There is no specific target, but trend data should be kept for information.

Poverty measure	Attribute	Indicator	Purpose	Target
Capability	Access to health and social services	<ul style="list-style-type: none"> <li>▪ Distance, journey times and cost to stocked health centre</li> <li>▪ Similar indicators, but for emergency access to hospital</li> </ul>	To identify the ease (or otherwise) of access to medical facilities both in normal and emergency situations	Indicator for planners and operators
	Access to land and housing	<ul style="list-style-type: none"> <li>▪ Distance to public transport route</li> <li>▪ Journey times and costs to major urban employment centres</li> <li>▪ Journey times and costs to major markets</li> </ul>	To identify the degree of isolation of the household from major employment and market facilities	Indicator for planners and operators
	Access to education	<ul style="list-style-type: none"> <li>▪ Distance, journey times and cost to primary and secondary education facilities</li> <li>▪ Number of accidents involving students (during travel to/from school)</li> </ul>	To identify the ease of access to school, and the risk of road traffic accidents – accident hazards need to be removed, and mitigation measures adopted	Indicator for planners and operators
Security	Safety	Bus and rail: <ul style="list-style-type: none"> <li>▪ Fatalities and injury accidents (absolute and per vehicle)</li> <li>▪ No. of pedestrian injuries and fatalities</li> <li>▪ NMT injuries / damage</li> </ul>	To gauge magnitude of the safety problem and to focus attention on the plight of pedestrians.	National norms suggest that fatality rates per 10,000 vehicles will be in the range of 50 – 150. The aim will be to stabilise and reduce rates, once established.
	Vulnerability to transport 'shocks'	<ul style="list-style-type: none"> <li>▪ No. of reported criminal offences related to public transport</li> <li>▪ Av. Access distance to nearest public transport (km)</li> </ul>	To establish how secure transport is to use, and what degree of isolation from the transport system exists.	The aim will be to stabilise and reduce crime rates once established. Similarly information is needed on access distances.
Empowerment	Inclusion	<ul style="list-style-type: none"> <li>▪ Number of participatory meetings between local authority (responsible for transport) and users and communities</li> <li>▪ Number of participants surveyed per housing area, or population or some other distinct area</li> <li>▪ Proportion of participants contributing to meetings – disaggregated by gender, age, income</li> </ul>	To gauge the level of engagement between authority and community and to measure quality of participation.	

**Table 8: Checklist for poverty audit of transport**

Issues	Diagnostics and Actions
<p>Poverty reduction requires economic growth, redistribution, security and empowerment.</p> <p>Economic growth: transport mobilises resources.                      Redistribution: supports targeted delivery (health, education, etc)                      Security: transport seeks to reduce the vulnerability of the poor                      Empowerment: transport supports the participation of the poor in the development process</p>	<p>Strategic principles</p> <p>Reflect transport's dual role in promoting market-based economic growth and poverty-targeted interventions                      Although economic efficiency is viewed as paramount, this needs to be balanced against the needs of the poor, in particular the effect of economic efficiency on the dynamics of the labour market                      Transport needs of poor recognised and addressed, to extent possible, with least-cost interventions                      Adverse effects on poor should be addressed at program level under a national transport policy framework                      Wide stakeholder consultation (particularly for prioritisation)</p> <p>Strategy development</p> <p>Understanding how poverty outcomes are linked to the major dimensions of poverty: economic opportunities; capabilities, empowerment; security against shocks.</p>
<p>Transport policies and programmes can be regressive if they involve:</p> <p>Displacement of modes used by poor                      Displacement/partitioning of low-income communities                      Involuntary resettlement of the poor                      Increased risk of traffic accidents                      Increased incidence of environmental pollution                      Labour redundancies caused by scheme                      Significant changes in transport tariffs (due, say, to removal of subsidies)</p>	<p>Diagnostics:</p> <p>Transport performance indicators                      Examination of policies and performance related to needs of poor                      Identify transport problems which most encourage economic growth                      Examine impact on accessibility of policies in other sectors                      Prioritise transport components</p>

Source: based on Poverty reduction strategy paper (PRSP) Sourcebook.  
 Transport: Infrastructure and services (C Gannon and Z Liu). Draft, August 2000.

## 4.5 Processes in a poverty audit of transport

Ideally a poverty audit will be undertaken at all stages of project development; poverty assessment should be part-and-parcel of the identification of the need for, and the development of an intervention, particularly if the objectives for development are concerned with poverty alleviation. In current practice, the poverty audit may be applied at the back-end of project design, but this should be avoided in future.

Table 9 outlines the key activities that should be pursued at the various stages of the project cycle of infrastructure investment.

**Table 9: Processes in undertaking a poverty audit of transport**

<b>Project Cycle Stage</b>	<b>Activity</b>	<b>Output</b>
<p><b>General Planning.</b> Identification of transport problems within the area of study, and the general nature and programme for transport development over both short and long-term periods. Includes the establishment of objectives, policies, strategies and an outline action plan. The development of institutions will also be addressed at this more global stage of transport development. General planning identifies a broad set of possible transport developments, which require further detailed analysis in the project cycle.</p>	<p>Identification of the nature of poverty in the area of study, and the role of transport in meeting the needs of the poor. Use of participatory analytical techniques to support this enquiry. At this level of enquiry (i.e. non-specific in location), the use of regular consultation panels may provide the best input. Use of transport-poverty indicators to inform the background analysis.</p>	<p>A report, or chapter of the Transport Planning Report, which addresses poverty issues. This should specify how poverty is being addressed at the particular level of investigation (e.g. in terms of a specific district or the city as a whole), and how the poor will benefit from the proposals being recommended. The report will identify any problem areas where transport development may adversely impact on the poor (and other disadvantaged groups), and suggest remedial measures that should be considered at pre-feasibility and feasibility stages. It is at this stage that consideration of poverty impacts should influence the prioritisation of interventions.</p>
<p><b>Pre-Feasibility.</b> The stage where a particular transport problem (identified at the general planning stage) is subjected to more detailed analysis, as a way of identifying the best general solution, and whether it is worth undertaking very detailed feasibility and design work</p>	<p>Assessment of how the particular transport problem impacts on the poor. Requires identification of the target groups, and how they will be affected. Use of participatory techniques to support this enquiry. Ad hoc consultation (e.g. focus groups) is appropriate.</p>	<p>A report or chapter in the pre-feasibility report that identifies and addresses the poverty issues. The report will be similar in outline to that for general planning, but will also comment on the extent to which remedial actions in respect of poverty concerns have been addressed.</p>
<p><b>Feasibility and Preliminary Engineering Design.</b> The pre-feasibility study identifies an outline solution to a particular problem. Feasibility work takes this screening process to a much greater level of detail, identifying the best solution to the original problem. Preliminary Engineering Designs give a very accurate 'fix' to the solution.</p>	<p>At this stage, the project is at an advanced stage of development, and there may be little more to add by way of poverty impact. Participation should be integrated into the design stage to identify any local caveats that may obstruct implementation. It is important to check that any recommendations from the pre-feasibility work are attended to.</p>	<p>A chapter in the final feasibility report should briefly outline whether poverty concerns identified at earlier stages of the project cycle have been addressed, and how.</p>
<p><b>Final Engineering Design.</b> The development of the bills of quantities, tender documents, and other materials required by the implementation team.</p>	<p>No specific activities at this stage.</p>	<p>No output at this stage.</p>
<p><b>Implementation</b> The construction (infrastructure) or implementation (transport services) of the project.</p>	<p>Participation by local stakeholders should continue throughout implementation to promote inclusion and ownership</p>	<p>No output at this stage.</p>
<p><b>Evaluation and monitoring</b> Comparing output performance to expectations.</p>	<p>Use of transport-poverty indicators, and the regular consultative panel to monitor impact. Participatory activities are a requisite for all stages of project design and implementation, not least monitoring and evaluation of project outcomes</p>	<p>An evaluation report, which could be part of a more general (annual) review of transport and poverty.</p>

## 5 INSTITUTIONAL CAPACITY BUILDING TO UNDERTAKE RESEARCH AND USE RESEARCH FINDINGS

The value of planning and research programmes is often diminished by survey and analysis skills and the ability to apply findings. Research may be undertaken by staff who do not have appropriate training and skills. Research outputs may be given to government departments whose capacity to apply the research is limited. Where this is the case, there is a need for institutional capacity building to encourage effective research and its uptake.

The urban transport sector reflects this weakness, with little tradition in the use and interpretation of participatory enquiry. This applies equally to most of the urban transport stakeholders, including regulators, planners, operators and users. Capacity building therefore has to address the needs both of those who undertake the enquiry, and those to whom recommendations are addressed. Boxes 15 and 16 outline approaches that were used in case-study work; in the first example, the aim was to build capacity in an existing transport planning consultancy, while the second example demonstrates the need to involve all stakeholders in the learning process.

### **Box 15: Capacity building in Accra: developing a private consultant's ability to undertake participatory analysis**

The collaborating partners in the Accra case-study work were a private planning and transport consultancy, Comptran Associates. Their work is typical of such groups, involving advisory, planning and design services for urban land-use and transport (mainly roads) development. Enquiries, where undertaken, are usually based on questionnaires that may be directed at households or individuals. These surveys usually are based on closed questions, and expect very little in the way of opinion or attitudes of respondents.

In order to introduce the idea of user participation and contribution to transport development, a process involving five main steps was adopted to build the capacity of the research team in Accra.

- 1) First, an organisational analysis of the company was carried out. This was followed up at the end of the first year with a review conducted by an independent consultant, in which all the consultant's department heads, company directors and the planning department staff were interviewed. This activity was used to help develop next steps for the company's own training and capacity building needs for participatory research, beyond the planning department.
- 2) Initial training in participatory analysis (PA) was provided for two core members of the company's team through the CIDT's connections with the Walsall PA network and the Walsall Black Sisters Co-operative.
- 3) Further PA training was done 'on the job' in Accra through pilot studies with the CIDT researcher. This was the preferred learning style of the company's staff.
- 4) A series of developmental mini-workshops were held throughout the project titled "lessons learned."
- 5) Informal reviews of data (and how the research achieved process and product objectives) were carried out after each period of fieldwork, often over lunch or after the office had closed. Thus, the learning process itself was a participatory activity, an '*action research*' process, with each step along the way being examined and modified as experience, confidence and expertise grew.



**Box 16: Capacity building in Harare: the need to sensitise all stakeholders to the participatory process.**

The collaborating partner in Harare was the Department of Rural and Urban Planning of the University of Zimbabwe. They used the assistance of a private development-management consultancy that already had strong conceptual and analytical skills in participatory methods of research.

Though the Department of Rural and Urban Planning has undertaken considerable research in transport planning and policy development, including specialist application of quantitative household and transport operator questionnaire surveys, it has only recently begun applying a Sustainable Livelihoods Approach to its work. Capacity building was imparted as follows:

- *Prior to undertaking the community appraisal work*: Extensive discussions were held with TRL's Social Development Researcher and the research team principally on conducting participatory methods for urban appraisals. In addition, secondary participatory research literature was provided for the survey team to enhance their knowledge of participatory appraisal applications in an urban setting.
- *Training of University of Zimbabwe staff*: An Interactive training session was held on participatory research methods for University of Zimbabwe staff and Masters students, two of whom were involved in the Urban Activity Patterns study. The training provided a forum in which students and researchers could learn from and provide examples of participatory research in action, including best practice and lessons learned. Training included theoretical and practical application of methods including observation, semi-structured interviews, mapping, transects, calendars, timelines, diagramming and ranking. The session also provided means for analysing qualitative data derived from participatory exercises including the use of anecdotal evidence.
- At three of the survey sites during the community appraisal sessions, City of Harare officials attended, principally to learn how to conduct participatory research.
- A meeting was held with senior officials of the Ministry of Transport, to discuss ways in which the research could actively support the development of national transport policy in Zimbabwe. In so doing, they were advised on the participatory approaches and how these might inform the policy development process.

## **5.1 What institutions may benefit from capacity building?**

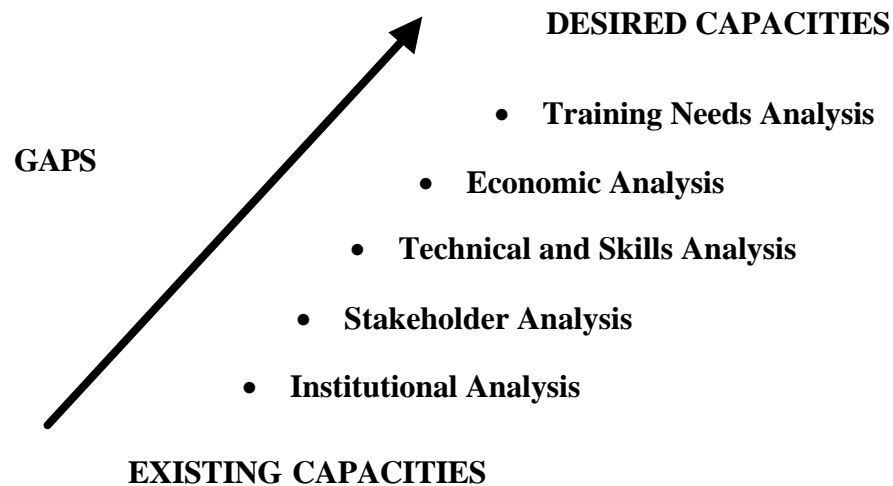
The list will vary according to circumstances, but may include:

- Central government institutions (departments or sections in different ministries, primarily transport-focused but not exclusively so)
- Municipality institutions (executive and implementation)
- Citizen groups
- Private companies
- Non-government organisations

It is important to consider those institutions that are in any case reforming or changing roles in any decentralisation process or other initiatives relating to governance, political or institutional reform. Capacity building activities must link with any change-management existing or expected efforts, in ways that support and anticipate needs.

## 5.2 How might capacity building be undertaken?

Any efforts to build capacity must first look at what capacities already exist. Analysis is then required to identify and respond to gaps that must be addressed to reach the capacity required (Figure 5).



**Figure 5: Examples of different analyses required to build capacity to undertake research or apply research findings**

Each of these analyses requires expert skills. Practically speaking, the time and expense involved is often not as high as first assumed and is likely to be offset by the knowledge gained in terms of what is required and how to proceed.

Using the case study examples, a relatively straight-forward training needs analysis for the private sector research partner in Ghana demonstrated that many additional skills required in PUA techniques could be achieved 'on-the-job', although the experience itself suggested the need for additional training would be beneficial. Community analysis and PUA skills in Sri Lanka were relatively far advanced, so that the training needs analysis itself could be accomplished 'in-house' with modest external support. Stakeholder analysis in Zimbabwe showed that students who would eventually be involved in transport-related research would benefit from practical experience in PUA that could form part of their pre-service training.

Clearly, not all personnel will require the same level of training. This will need to be tailored to the needs of the department and staff concerned. For instance, economic and institutional analysis is very specific and hence only a few staff are likely to seek training in these aspects. The key objective must be that departmental staff, whether within central or municipal government, consultancy or university, all be exposed to participatory methods, and their capacity raised to undertake PUA. Such training needs to be integrated with data collection surveys using quantitative methods so that staff are informed of both from a transport planning perspective.

Increasingly, where decision making is being decentralised, it is important that staff who are making decisions and implementing projects are aware of and trained in all techniques pertaining to their responsibilities.

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