

# Activity Patterns, Transport and Policies for the Urban Poor

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**ABSTRACT:** Traditionally, urban transport planners have been concerned with understanding trip patterns (spatially and temporally) as an indicator of travel demand. However, the planning process can be complemented by a better understanding of household activity patterns, and the impacts and implications of travel on livelihoods. The paper describes the methodology, approach and findings of a research project undertaken in Ghana, Zimbabwe and Sri Lanka to investigate and address ways in which transport influences how well other sectors (in particular health, education and employment) operate and deliver benefits which contribute to the sustainable livelihoods of the urban poor.

**RESUME:** Auparavant, les planificateurs de transport ont beaucoup plus centré leurs efforts pour estimer le besoin de transport par l'analyse des caractéristiques des déplacements (spatiales et temporelles) comme indicateur de l'évaluation de la demande. Cette approche peut être cependant complétée par l'analyse de l'activité des ménages pour mieux apprécier l'impact du transport sur leur bien être. Cet article présente une méthodologie et les résultats de recherche menés au Ghana, Zimbabwe et au Sri Lanka. Il souligne l'influence des transports sur les autres secteurs d'activités (santé, éducation et emploi) et les bénéfices engendrés pour les pauvres.

## 1 INTRODUCTION

The research project on Activity Patterns, Transport and Policies for the Urban Poor sponsored by the UK's Department for International Development (DFID), was undertaken in Ghana, Zimbabwe and Sri Lanka, and was completed in April 2003. The project brought together six organizations involved in the execution of the study, comprising TRL, WEDC (Water, Engineering and Development Centre) and CIDT (Centre for International Development and Training) (UK), and the University of Zimbabwe, Comptran (Ghana) and Sevanatha (Sri Lanka).

The aim of the project was to address the ways in which transport influences how well other sectors (e.g. health, education, employment) operate and deliver benefits which contribute to the sustainable livelihoods of the urban poor. This objective was reached by responding to three key research questions:

1. What are the determinants of activity patterns in the urban sector?
2. How does the process of undertaking the research inform the development of policies (in

both the transport and other sectors) to meet livelihoods aspirations?

3. How can transport be developed to support the objectives of other sectors?

Outputs of the research comprised both process and product including:

- Strengthened capacity of (local) collaborating institutions' staff for carrying out research into urban travel policy development
- Processes tested and improved for researching the travel-related activity patterns and needs of the urban poor
- Authoritative and practical Urban Mobility Planning Guidelines developed, published and disseminated (TRL, 2003 – available on [www.transport-links.org](http://www.transport-links.org)).

## 2 TRANSPORT AND THE URBAN POOR

Development aid is now highly poverty focused, and the justification for transport investment is shifting from that of pure economic efficiency to equity im-

plications: *in what ways does transport provide benefits and disbenefits for the poor?*

There are many attributes to poverty, but for the purpose of analyzing 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' (Gannon and Liu, 2000).

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 labor.

*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 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, marginalization and risk.

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.

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.

### 3 STUDY METHODOLOGY AND APPROACH

The study was undertaken within the framework of a sustainable livelihoods approach. That is to say that the focus was on activities of individuals, households and communities, and how their livelihood strategies are influenced by both transport provision and the regulatory and institutional frameworks which influence the provision of transport.

Accra, Harare and Colombo were selected for their different approaches to transport provision. Accra has a very 'free' market approach to public transport, whereas both Harare and Colombo have (in varying degree) a more organized (though still largely in private hands) system.

At the macro-level, the aim of the quantitative (questionnaire) and qualitative (participatory) surveys and measurements, was to develop indicators of transport and health-care, education or employment provision. Any positive correlation between the sets of indicators would be sought, with comparisons on both an intra-urban (i.e. comparisons of different communities within a city) and inter-urban (i.e. comparisons between the chosen case-study cities) scale.

The micro dimension investigated how individuals use health-care and education services, and the ways in which transport impacts on their decision-making in respect of using such services. Similarly, it explored the decision making involved in respect of employment opportunities, including location of work and travel to and from work.

### 4 RESEARCH FINDINGS

The following extracts from the case study findings in Accra, Harare and Colombo summarize the transport requirements and constraints of the urban poor in accessing health, education and employment.

#### 4.1 Ghana

In general, the survey results varied between different demographic groups, yet common responses related to the cost, congestion, availability and safety

of urban transport services, as well as condition of the road infrastructure. In particular, people related road safety to vehicles themselves, to the way drivers and 'mates' drove and managed vehicles, and to infrastructure, such as drains and potholes. The severity of these issues varied with time of day and season, the rainy season being a particularly problematic time for almost everyone, especially school-children and other vulnerable groups with limited mobility.

Sexual harassment on public transport also emerged as a significant issue amongst the research sample. In particular, some disabled women talked of verbal and sometimes even physical harassment. This was an issue for blind women, those with limited mobility and those who were unable to speak or hear.

The team was surprised to learn of the number and variety of transport-related problems facing school children. School children face difficult choices that indicate how much transport issues are bound up with their lifestyles. Students in Ghana receive limited money for transport each day (\$0.25), but have to choose between buying books, eating lunch or taking a tro tro (the local minibus) to school with the money provided.

Teachers and children both reported that if children are late with their morning chores, they may take a tro tro and go without lunch, only to fall asleep with hunger. Alternatively they could eat and get to school late and face a thrashing from a teacher. One head teacher said that of 200 students, about 80 were poor attendees, primarily because of the problem of physically getting to school.

Many teachers also said they face transport problems getting across town to get to school on time. They were keen to understand the economics and potential routing of school buses and whether this could help solve the problem.

On using participatory tools as a means of enquiry and working with communities and other stakeholders, the team found that the tools:

- Could be used in a transport context, and in an urban situation
- Proved helpful for participants and researchers alike, enabling people to express themselves freely rather than being constrained by pre-formed survey questions
- Were cost-effective and helped get policy-relevant information in ways that questionnaires and surveys could not do
- Helped to reach people in ways that people themselves found useful
- Presented relatively straight-forward training needs for the researchers and were easy to facilitate with a variety of groups after initial practice

Using the tools within a Livelihoods approach to transport research:

- Provided a more complete picture than economic and technical analyses can do on their own
- Allowed local people to give voice to their own needs and concerns
- Permitted a more comprehensive view of the inter-related nature of transport policy among different sectors
- Provided regulators and operators with policy-relevant information

#### 4.2 Zimbabwe

The general consensus from the research was that, of the three sectors studied, the health sector was found to be beset with problems. While both patients and staff acknowledged and applauded the increase in more health centers, health care service had deteriorated in the last 5 to 10 years. The following reasons were cited:

- Lack of drugs at public clinics and hospitals
- High cost of drugs
- Loss of staff due to low remuneration
- Lack of ambulances to transport critically ill patients in emergencies
- Long waiting times which in many cases are in excess of ninety minutes
- A generally dirty environment compounded by the shortage of trucks that carry garbage - This is an important issue that was repeatedly echoed by both staff and patients at clinics

While patients generally do not experience problems in accessing health facilities, a significant proportion of staff travel considerable distances to reach their places of work. The majority of staff uses public transport. With no public transport connecting residential areas, an interchange is necessary and thus increasing transport costs. In addition, night duty necessitates traveling by night, thus increasing risk to personal safety.

With respect to accessing education, the majority of pupils (68%) walk to and from school. Walking time ranges from 2 to 60 minutes with the majority walking for an average of 25 minutes. Approximately 80% of pupils use non-motorized, and pupils using public transport were mainly those originating from a catchment area of 5–10 km.

As in the case of healthcare provision, teachers also experience problems in accessing their schools as they have to travel considerable distances. Schools do not provide accommodation for members of staff. The majority of teachers use public transport and have to make an interchange before reaching the school. Teachers have little choice in selecting a school to work in, as demand for school places in Harare far outstrips the availability of teaching posts. Many teachers want to move into Harare ei-

ther to join their spouses or to pursue education, and few wish to be stationed in remote rural areas.

To summarize, there are a number of problems experienced with accessing education and these include:

- Recklessness by commuter omnibus crews: *“Commuter omnibuses only leave when full, driving is reckless and the crew use abusive language”*
- Discrimination of ‘short distance travelers’ during peak hours
- Pupils who are dependent on cycling complain about the lack of cycle tracks, hence they are forced to share road space with motorized transport
- Pupils who rely on public transport are charged the same fare paid by adults, thus forcing some to walk long distances when financial resources are exhausted
- High cost of transport forces pupils to engage in income generating activities to supplement their bus fare to the detriment of their studies

The principal economic activities in the study sample revolve around formal and informal employment. The former has significantly declined in importance due to the adverse economic situation currently prevailing in Zimbabwe. Retrenchment levels from formal employment were higher for residents in the six areas studied as most people are poor and lack appropriate skills and qualifications.

In respect of formal sector employment, those in gainful employment are mainly employed as unskilled workers in the commercial sector of the central business district (CBD) and industrial area. In all six areas, a high proportion of those formally employed work as security guards and domestic workers. Other common forms of employment in which residents of the six areas are employed include kombi (the local minibus) drivers, and unskilled jobs in the commercial and industrial sectors.

Transport is critical to the pursuit of livelihood activities of the poor in Harare. Most of the commodities traded are bought from Mbare (5 km from the CBD) where the largest fruit and vegetable wholesale and retail markets are located. Traders in all the six sites 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 traveling. The situation is compounded by the general shortages of some commodities on the market such as cooking oil, maize meal, and sugar.

In summary, access to social services such as health and education was found not to be a serious problem in Harare as most trips are undertaken on foot because of the proximity of these services to

peoples’ homes. There are however transport problems for a few pupils who reside far away from schools and for emergency health cases.

In as much as a lot has been done in the health and education sectors to provide services that are easily and physically accessible to the people, quality of service remains the most serious problem that affects access to these two sectors. The problem is characterized by shortages and high costs to procure drugs and medicines at health centers, and textbooks at schools.

Livelihood activities provide the premise upon which people travel. With the decline in formal employment, many residents have devised coping strategies by engaging in self-employment activities in the informal sector. Evidence from the study has shown that more trips are made in respect of informal sector activities in comparison with the formal sector.

Transport related problems for the employment sector include high transport costs, inadequate public transport services resulting in long waiting times, lack of direct services to desired destinations and unruly behavior by kombi drivers and conductors. High transport costs have compelled some people to devise coping strategies. These include selling of sweets by school pupils to earn money for transport, procuring goods locally on the part of vendors, and resorting to walking instead of using public transport, in addition to a reduction in the frequency of travel particularly on non-essential trips. A complementary study on Sustainable Livelihoods, Access and Mobility in the Harare-Bindura Corridor of Zimbabwe established that some residents of high density areas of Harare were relocating to Mbare because of its proximity to the CBD and the Industrial area (Bryceson et al, 2003).

#### 4.3 Sri Lanka

It was observed from the surveys undertaken in Colombo that around 90% of those engaged in employment activities have their activity locations within 10 km distance of the community. It was revealed that the sense of permanency of their occupancy has greatly influenced the construction of permanent houses and accumulating household assets by a majority of the urban poor. In those squatter settlements where the people do not have security of tenure, no improvements in housing or accumulation of household assets was evident. Therefore, apart from the locational factors of activity patterns and transport provision, the security of tenure has had notable impacts on livelihood improvements of the urban poor in those case study settlements.

It was observed that a large percentage (around 60% to 70%) of working women were engaged in housemaid activities mostly within walking distance (1 to 2 km) or places up to a maximum of 4 to 5 km

distance. The remaining female workers were engaged in factories, shops and other institutions located beyond 5 km distance.

It was found that the community of Badowita has been mainly dependent on Colombo South General Hospital for their health services. All other communities primarily depend on municipal dispensaries. These communities have been visiting the Colombo general hospital and the children's hospital at Borella in addition to the municipal dispensary for their medical needs. Visiting a private doctor has been insignificant for all the settlements except Nawagam-pura where there is no municipal dispensary.

It was revealed that over 95% of school children in the case study settlements attend schools located in different parts of Colombo city. The balance (5%) attends schools outside Colombo city.

For almost all the case study settlements there exist a nearby market place (within 1 to 3 km distance). Therefore, many household members walk to the market without using any transport mode. It was significant to note that the market place has been used by a majority of household members for purchasing goods, and not for the sale of items which they produce. Those who are engaged in skilled and unskilled work move about within the city using public buses or walking.

Over 90% of those sampled use public buses operating in the city. Use of three wheelers is limited to emergency situations. Yet, a significant number of household members reach their places of work and service centres by walking, since such activities are located proximate to their settlement.

Users of public buses remarked that during the morning and afternoon peak hours it was extremely difficult to catch a bus due to crowded conditions at bus stops. In particular, school children and women experienced difficulties in traveling in public buses during peak hours.

The other significant issue raised by respondents was the inherent waste of time caused by traveling in public buses due to congestion at junction centres and waiting time for the buses. Due to the frequency of these delays, many respondents claimed that they hire a three wheeler vehicle to go to the government hospital, thus spending more money than necessary, in order to avoid the waste of time by travelling by bus. Similarly, a lack of buses during the night has been a major problem for those people who work in

the city on shift duties. They have to spend more money to hire three wheelers to get back home (ten or fifteen times the normal bus fare).

The representatives of the national level institutions believe that the urban poor in Colombo enjoy a sufficient level of accessibility to essential services and the city's major activity patterns due to their locational advantages. The majority of the urban poor settlements in the city of Colombo are located within 10km of the city centre, therefore accessibility for the poor is not perceived to be a significant problem by the officials of national level institutions.

## 5 URBAN MOBILITY PLANNING GUIDELINES

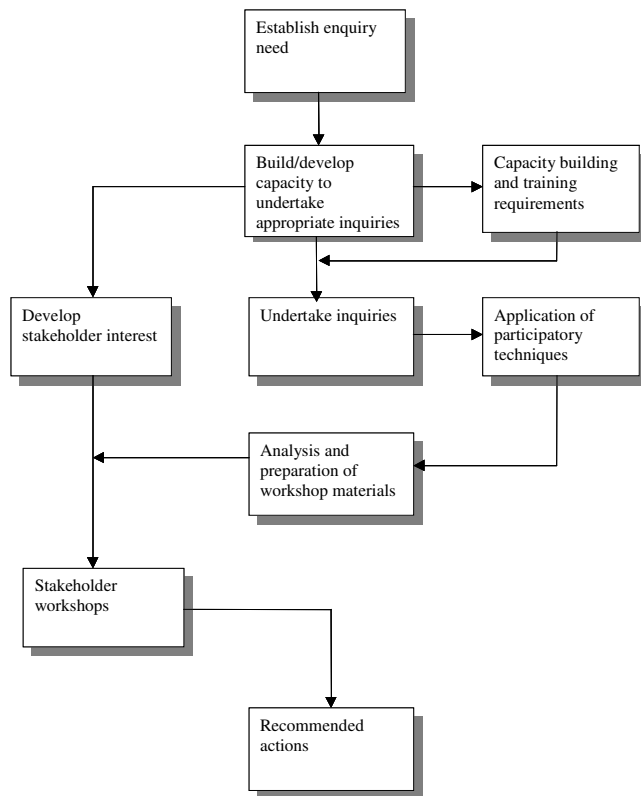
The Urban Mobility Planning Guidelines are structured into four broad sections comprising Methods of enquiry, Transport planning framework for the urban poor, Transport poverty audit and Institutional strengthening and capacity building. A summary of the urban transport enquiry process is provided here.

### 5.1 *Methods of Enquiry*

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

Figure 1 sets out a simplified flow diagram of the urban transport enquiry process, emphasizing 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: Urban transport enquiry process**

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 prioritize interventions. These comprise the following methodologies:

- Key informant interviews
- Participatory urban analysis (PUA)
- Household surveys
- Travel diaries

PUA 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, prioritize 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 PUA reinforces key principles of community participation and ownership in transport policy-making, planning and actions. 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.

## 5.2 Transport Planning Framework

The focus on poverty relief has been accompanied by new vehicles for analyzing 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 program). 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.

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 subsidized) 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.

## 5.3 Transport Poverty Audit

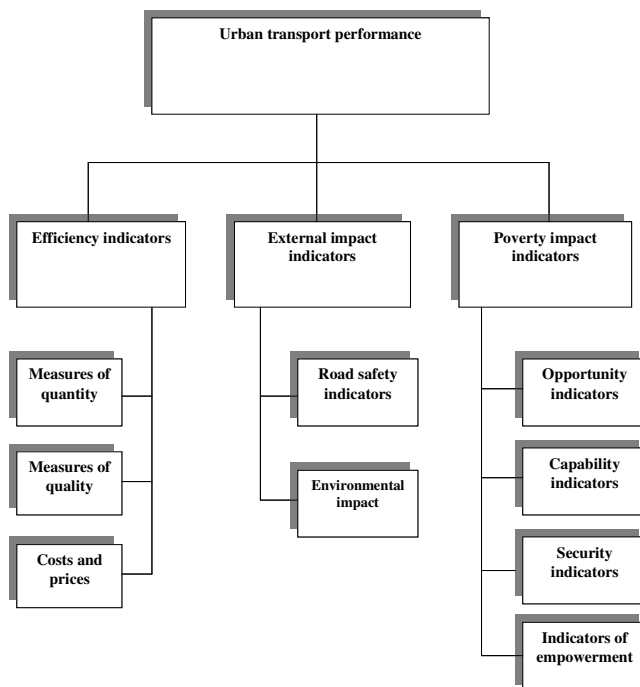
An aspect of the auditing process is the use of indicators for measuring transport performance, and hence establishing targets. Figure 2 gives an overview of the indicators that can be used to measure

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.

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 programs where performance, measured in these terms, is ineffective and damaging.



**Figure 2: Transport performance indicators**

The purpose of a transport poverty 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. 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.

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.

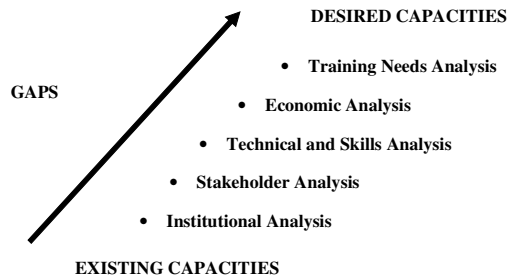
Indicators are a useful mechanism for tracking performance and impact resulting from a transport intervention. They can also usefully point to deficiencies which need attention, but do not necessarily help in understanding what the impacts of a transport intervention might be. In this context, specific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

#### 5.4 Institutional Capacity Building

The value of planning and research programs is often diminished by survey and analysis skills and the ability to apply findings. Research may be undertaken by staff that 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.

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 3).



**Figure 3: Building capacity to undertake research**

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.

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

## ACKNOWLEDGEMENTS

This paper is an output from a DFID-funded knowledge and research project, carried out for the benefit of developing countries. The views expressed are those of the authors and not necessarily those of the DFID. TRL would like to acknowledge Dr P. S. Jones (CIDT) and Dr M. Sohail (WEDC) for their contribution to the Urban Mobility Planning Guidelines.

## REFERENCES

- Bryceson, D. et al. (2003). Sustainable livelihoods, mobility and access needs. *TRL Published Report 544. Crowthorne: TRL Limited*
- Gannon, C. Liu, Z. (2000). Poverty reduction strategy paper (PRSP) sourcebook. Transport: infrastructure and services. *Washington D.C.: World Bank*
- TRL (2003). Activity patterns, transport and policies for the urban poor: urban mobility planning guidelines. *Unpublished Report PR/INT/259/02. Crowthorne: TRL Limited*