

# Poverty and Transport

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in collaboration with DFID

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**Toolkit**  
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# Poverty and Transport Toolkit

## 1. Using this Toolkit

### 1.1 Purpose of Toolkit

This toolkit aims to provide a practical guide for government decision-makers in formulating policies for the transport sector that contribute to poverty alleviation. It assumes that users of the toolkit are committed to being more strategic about the goal of poverty reduction and helps explain what it means to have poverty reduction as an overarching policy goal. It aims to develop a conceptual framework through which policy makers can understand the various dimensions of poverty, identify its causes and formulate strategic approaches to poverty reduction through appropriate policy interventions.

### 1.2 Structure of Toolkit

This toolkit is divided into 6 sections to provide policy makers with the requisite tools to design and implement effective strategies for the reduction of poverty through the transport sector.

- section 1 defines the purpose and structure of the toolkit
- section 2 presents definitions of poverty
- section 3 uses the sustainable livelihoods to identify the poor's transport needs
- section 4 examines how transport interventions can contribute to creating a macroeconomic environment that facilitates sustained poverty reduction
- section 5 presents critical policy issues: mainstreaming and prioritising
- section 6 discusses monitoring and evaluation

The toolkit draws on the findings and conclusions of Booth, Hanmer and Lovell (2000) *Transport and Poverty*, a study commissioned by the World Bank in collaboration with the UK Department for International Development.

## 2. Understanding Poverty

### 2.1 Definitions of Poverty

The central importance of poverty reduction as one of the principal overarching goals of development is reflected in recent commitments by multilateral development agencies to specific time-bound poverty reduction targets. The adoption and integration of poverty reduction targets into operational frameworks requires a clear understanding of the meaning of poverty and the dynamics of the process of impoverishment. This section is a practical guide to the meaning of poverty, illustrating in simple terms the range of resources available for thinking about poverty in a strategic way. The integration of transport sector issues within poverty reduction strategies needs to be centred upon an appropriate definition of poverty.

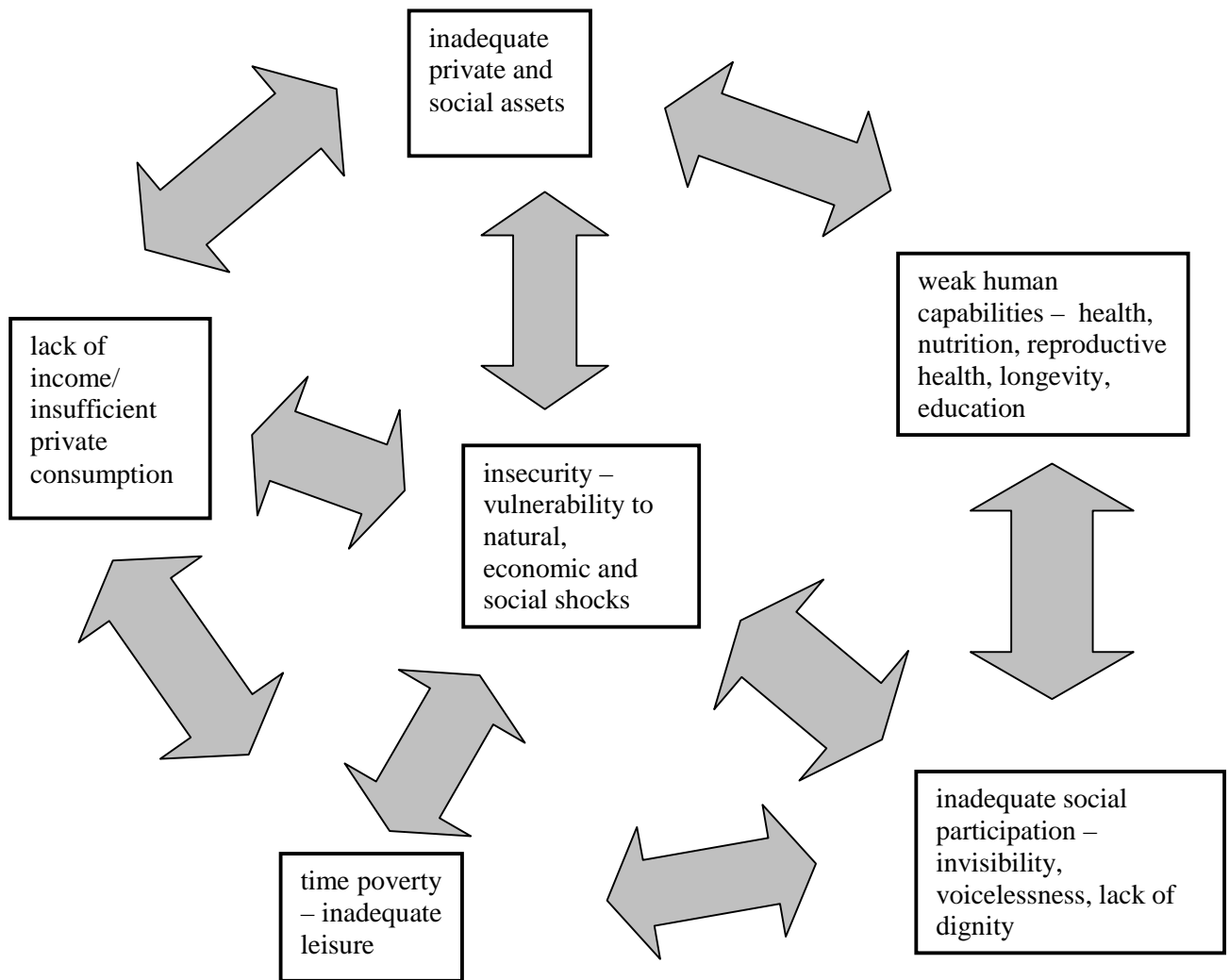
#### 2.1.1 What is poverty?

It is now widely accepted that poverty is a multi-dimensional problem and needs to be addressed as such (Booth and Koonings, 2000). Current research and specialist opinion suggest six dimensions that need to be covered in a definition of poverty that is adequate to its purpose:

1. Income/consumption;
2. Capabilities;
3. Private and social assets;
4. Free time;
5. Empowerment or attainment of minimal social-participation.
6. Security, in respect to risks, shocks and violence.

These dimensions and their interaction are shown in Figure 1.1. below. Poor peoples' participation in the definition and diagnosis of poverty has been of central importance in the advancing understanding of poverty and identifying its dimensions. The arrows between the dimensions in Figure 1 illustrate conclusions drawn from many participatory poverty assessments that "*[p]overty never results from the lack of one thing, but from many interlocking factors that cluster in poor peoples experiences and definitions of poverty*" (Narayan, 2000).

**Figure 1: Dimensions of poverty and their interaction**



Some important links between transport infrastructure and services and the poverty dimensions above include:

1. Inadequate infrastructure is a common symptom of the inadequacy of the poor's *access to social (common property) assets*. Geographical isolation and difficulty of access by national roads, rail or other national transport networks can limit poor communities' *participation in labour and product markets* and constrain their *economic opportunities*. Lack of affordable transport services or means of transport can mean that provision of transport infrastructure alone may not alleviate this constraint. Inadequate transport infrastructure can thus contribute to the causes of *lack of income and consumption* and *inability to accumulate private and social assets*.
2. Particularly in rural areas lack of transport infrastructure and services may constrain access to facilities and resources, such as schools, health centres and water, by the poor. Lack of transport services and infrastructure can thus contribute to *inability to strengthen human capabilities*.
3. Poor people's lack of *access to assets and technology* mean that production for the market and for the household is time and energy intensive. The greatest proportion

of the lowest productivity, most time consuming work is done by women. Improving transport infrastructure and services can be an essential component of a poverty reduction strategy that aims to reduce time spent in low productivity, high energy consuming tasks.

4. Lack of individual or household ownership of transport assets – bicycles, boats, ox-carts or motorised vehicles – is frequently one of the criteria that the poor cite as a factor differentiating poor from non-poor members of the community.
5. Poverty creates an environment for individuals which separates them *from decision making* in the broader society, *participating* in cultural events and the *development of social relations*. Lack of transport services and infrastructure can be a contributory factor to creating an isolated environment characterised by *poor communications* and lack of *links with the broader society*.
6. Lack of income and consumption, inability to accumulate private and social assets and inability to strengthen human capabilities all combine to *increase insecurity and vulnerability to natural, social and economic shocks*. Inadequate transport services and infrastructure constrain livelihood strategy options and thus restrict poor peoples capacity to cope, respond and adapt to risks, shocks and violence. But efforts to alleviate this constraint through transport interventions and construction of new transport infrastructure can *exacerbate exposure to risk*. Increased mobility may be associated with exposure of communities to new disease through in or out migration. In some of the AIDS afflicted countries the highest HIV prevalence rates are found on major transport routes and truck drivers are frequently considered a high risk group.
7. The essential aspect of a *multidimensional definition of poverty* is the extent to which public actions encompassing different sectors - e.g. health, education, agricultural extension, water, roads and the environment - can be used in poverty reduction strategies to address the needs of the poor. *Transport must therefore be considered in relation to other sectors if its impact on poverty is to be fully understood.*

## 2.2 How can the poor be identified?

A multidimensional definition of poverty makes it more difficult to identify the poor. The poor can be identified as those whose basic needs, rights, assets and income are insufficient to provide either a sustainable livelihood or a sense of well-being. However there is a necessary trade-off between adequacy and practicality in this definition of poverty.

What elements in a multidimensional definition of poverty are necessary?

- ⇒ Private Consumption.
- ⇒ Individual *and* household assets
- ⇒ Security, in respect to risks, shocks and violence
- ⇒ Social consumption (including use of common-pool resources and publicly-provided services)
- ⇒ Empowerment, or attainment of minimal social- participation, voice and dignity
- ⇒ Free time

Traditional methods use national surveys of private consumption at household level as the primary indicator. The advantage of this is that it permits the identification and analysis of poverty lines representing a minimum standard of consumption. This is useful for the construction of broad country level 'poverty profiles' but these are of limited usefulness for practical purposes. They fail to show the extent of age or gender-

specific poverty *within* households and provide insufficient detail to pinpoint poverty at levels most relevant for local planning.

Pro-poor planning requires a more sophisticated approach. The poor are not a single homogenous group but it is possible to identify 'functional groups' (Hanmer et al. 1997) that are known to experience poverty or vulnerability on several dimensions. Such groups who share specific attributes such as gender and livelihood status are a more suitable focus for poverty thinking than poverty line categories. Planners need to ask 'who are the poor' *within* each target level of social organisation e.g. individual, household, community, district, region, etc.

**Table 1: The poor as functional groups**

Potential Poor	Actual Poor		Potential Poor
New or cyclical poor; (ex) urban formal working or middle class, rural smallholders	Single-parent households with high dependency ratio (especially female and child headed)  Elderly widows	Women (and children) in households under and close to the poverty line  The chronically sick and disabled	Urban self-employed and informal wage workers (and their dependants)
Marginalised cultural categories (ethnic or caste groups, marginalised indigenous communities)	Refugees, internally displaced persons, undocumented aliens	Isolated rural communities	Landless rural workers (and their dependants)
		Herders and agro-pastoralists with few cattle	
		Farmers on marginal land with few financial assets	

Source: DAC Guidelines on Poverty Reduction (March 2000 Draft)

The table above illustrates the kind of social categories that planners might consider useful for policy-analysis. This process of identifying target groups must be informed by a combination of quantitative and qualitative data, including data derived from in-depth and participatory methods.

The groups in actual poverty (shaded) have certain identifiable characteristics in common - high vulnerability, lack of access to basic livelihood needs, weak human capabilities and/or the inability to participate adequately in social life. Those in situations of potential poverty may be expected to fall into actual poverty under adverse conditions and thus are a key concern for poverty reduction strategies.

## Poverty knowledge check list

The first step in making transport policy poverty focused is to gather information on the nature and extent of the poverty problem. Box 1 shows several indicators which are often collected by government statistical services. Resources vary from country to country. In addition to national publications produced by government and non government institutions the following publications are available in most countries:

- Poverty Assessments (often World Bank)
- Participatory Poverty Assessments (World Bank and others)
- Human Development Report (UNDP)
- Demographic and Health Surveys (Macro International, Department of Health)
- Population Census

Poverty information found in reports and other publications may need to be updated or expanded. Different government departments and ministries are responsible for providing poverty indicators at a national level which can be used by transport sector policy makers to update and expand information and knowledge about poverty.

Help in analysing these indicators should also be sought from the relevant departments.

### **Box 1 Useful poverty indicators at national level**

- Per Capita Income/ Expenditure
- Percentage expenditure on food
- Income distribution
- Head Count poverty index
- Life expectancy at birth by sex
- Infant Mortality Rate
- Nutritional Status
- Percentage of households with access to safe water and time to water source
- Population – Doctor ratio
- Per Capita public expenditure on health
- Percentage of population living in permanent houses
- Literacy rates by gender
- Per capita expenditure on education
- Pupil teacher ratio
- Unemployment rates by sex
- Ratio of total wage in the formal sector to GDP
- Participation rates or representation in decision making by sex.
- Deforestation rates
- Total road length by type
- Number of commercial vehicles registered
- Percentage of houses with electricity by rural / urban
- Annual registration of vehicles by type
- Kms of roads rehabilitated by type
- Population per telephone
- Number of persons per vehicle

### 3. Understanding transport needs of the poor: diagnostics

This section provides a framework for understanding the transport needs of the poor and a guide to the likely implications of different policy interventions. It uses the sustainable livelihoods approach as a diagnostic tool

#### 3.1 Transport for Sustainable Livelihoods

Transport is defined as the movement of people and goods by any conceivable means for any conceivable purposes. It is integral to attaining a livelihood. It has two elements:

- transport infrastructure
- transport services

The transport problems and needs of the poor are essentially about access. Access is a precondition for the satisfaction of almost any need, especially physical and therefore provides a central integrating concept with which to grasp the complex interactions between subsistence, economic and social needs. Accessibility is defined in terms of provision of access and the ease with which a need can be satisfied. Improvements in transport infrastructure and transport services can enable poor people to meet subsistence, economic and social needs more easily. The sustainable livelihoods framework can be used to understand how the poor live and so diagnose the best type of transport intervention to improve their livelihoods.

The sustainable livelihoods framework (see below) has three analytical components:

- structural conditions – conditions that are fixed in the medium to long term, that delineate the physical, economic and political environment in which the poor live and work.
- capital assets – the common property and individually owned resources that the poor can draw on for their livelihoods
- institutional conditions – the institutions, government (local, regional and national), the private sector) firms and NGO and the processes and social norms, legal, judicial, customary and gender relations, that provide opportunities and constraints for the poor's assets use.

From understanding these three components we can identify:

- livelihood strategies; and,
  - livelihood outcomes
- of poor people.

Capital assets lie at the heart of the sustainable livelihoods framework. The structural conditions and the institutional conditions govern how people use assets in their livelihood strategies. The wide arrows in Figure 2 show these linkages. The narrow arrows link livelihood outcomes to the livelihood assets and institutional conditions to structural conditions. Livelihood outcomes feedback into livelihood assets as they enable poor people to build up their assets e.g. through using more income to invest in physical or human capital. Alternatively livelihood outcomes may run down the asset base e.g.



through unsustainable use of natural resources. Institutional conditions are linked to structural conditions as over the long run changes in institutions, processes and social norms will change structural conditions. For example over the longer term agricultural productivity can be enhanced if farmers can take advantage of irrigation, agricultural extension and new technologies, delivered by public and private sector institutions. Ultimately this will result in the reduced impact of seasonality on food security and reduced vulnerability to famine.

Our goal is to understand how transport figures in livelihood strategies and outcomes. We demonstrate how the three analytical components can be linked to transport in Tables 2-4 below. The links shown are examples do not exhaust all the possible links between transport on the one hand and structural conditions, assets and institutional processes on the other.

**Table 2: Linkages between structural conditions and transport**

<b>Structural condition</b>	<b>Transport Link</b>
1. Geography	Sets transports conditions e.g. access by road, rail, waterway or sea. Determines choice of transport infrastructure e.g. bridges, tunnels rails, roads or paths. Influences cost of improving transport infrastructure.
2. Location	Distance of households from community centre, towns, capital, coast etc; roads/ infrastructure
3. Seasonality	Maintenance costs of infrastructure, need for all weather access roads, seasonal demand for transport services.
4. Population density	Level of effective demand for transport services.
5. Shocks	Vulnerability to natural and man made disasters- floods, famine, war, disease. Sufficiency of transport infrastructure for access in emergency. Potential of transport infrastructure to increase vulnerability by exposing communities to risk e.g. HIV/AIDS

## Figure 2 The Sustainable Livelihoods Framework

Source: developed from Carney et al. 1999

### Key

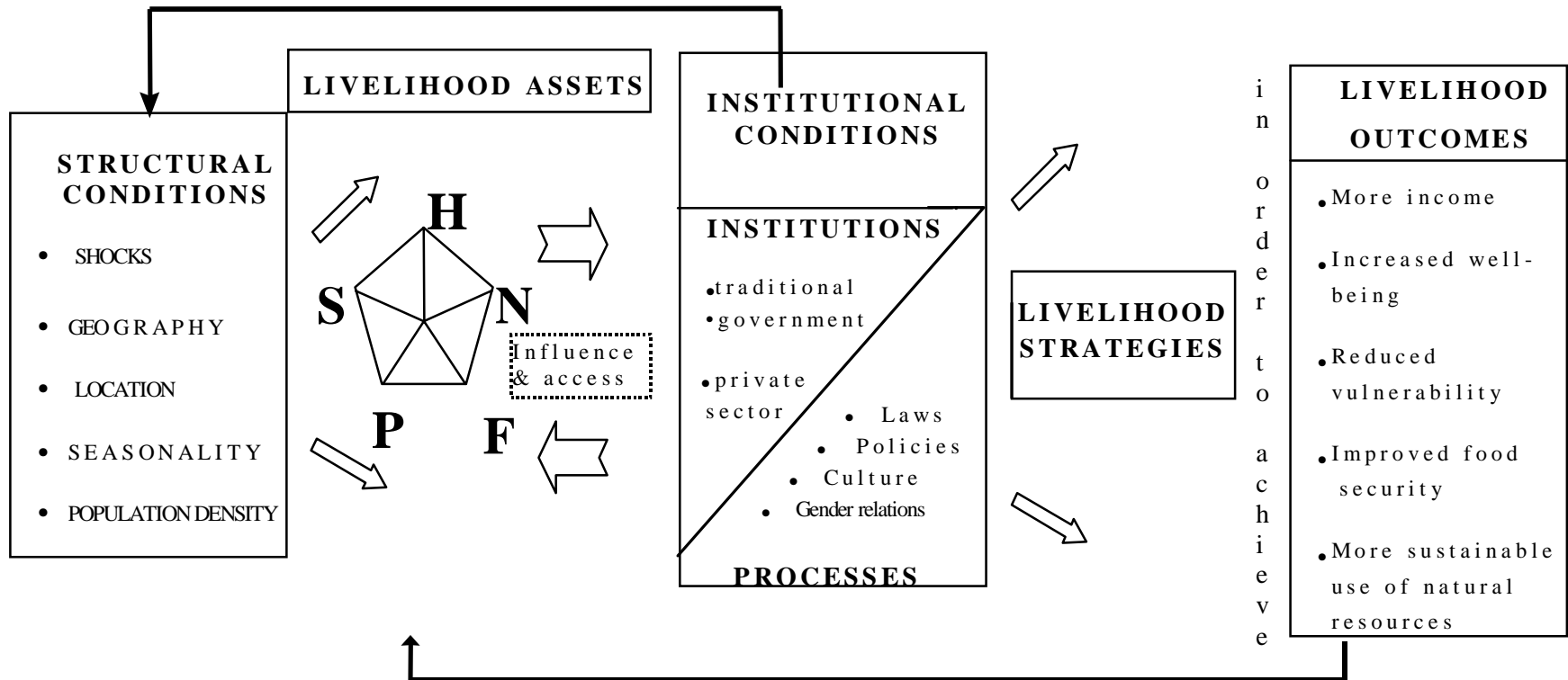
H = Human Capital

S = Social Capital

N = Natural Capital

P = Physical Capital

F = Financial Capital



**Table 3: Linkages between livelihood assets and transport**

<b>Capital Asset</b>	<b>Link with transport intervention/improvement</b>
<p>1. Natural Capital (natural resource stocks from which resource flows useful for livelihoods are derived)</p>	<p>Developments may bring environmental degradation, ranging from air and noise pollution (urban) to slope instability and soil erosion (rural). Changes in land use, improved access increases exploitation of local resources, e.g. forests. Increased competition for land and resources.</p>
<p>2. Social Capital (social resources on which people draw in pursuit of livelihoods i.e. relationships, membership of networks)</p>	<p>Increased contact with other social groups. Access to information, technology, new services. Lowers cost of social visits. Exposure to social problems e.g. alcohol and drugs.</p>
<p>3. Human Capital (skills, knowledge, ability to work, good health which enable people to pursue different livelihood strategies)</p>	<p>Increased risk of road accidents, incapacitation or death, loss of earnings. Formal and informal employment generation in construction, maintenance and service industries. Improved access to healthcare and education and extension services.</p>
<p>4. Physical Capital (basic infrastructure transport, shelter, water, energy and communications, production equipment)</p>	<p>Improved water, energy and communications (telephone, radio, post office) service delivery. Seeds, fertiliser, machinery. Depends on quality of road versus benefits derived from improvements and affordability of transport services? (esp. poorest)</p>
<p>5. Financial Capital (financial resources available which provide livelihood options e.g. savings, credit, remittances, pensions).</p>	<p>Reduced transport costs, travel times and vehicle maintenance and operating costs. All of which increase labour productivity and decrease farm input costs and produce prices. Improved income and improved access to markets, credit and savings facilities etc. help improve financial capital.</p>

**Table 4: Linkages between institutions and processes and transport**

Institution/Process	Transport Link
1. Local government	Responsible for transport infrastructure at district/local level. linking communities to services, markets and locations of political decision making.
2. National government	Responsibility for national transport infrastructure network linking community to cities, ports and regional centres.
3. Firms	Providers of transport services and, often in partnership with government, suppliers of infrastructure.
4. NGOs	Interventions to improve transport at local level e.g. introduction of appropriate transport technologies, planning community based initiatives to meet locally defined transport needs
5. Laws	Regulate the provision of transport services including public health and safety. Regulate contract tender procedures for infrastructure construction
6. Gender relations	Determine how transport assets and technologies are used e.g. whether it is acceptable for women to handle draught animals, use bicycles. Determine demand for mobility e.g. whether it is acceptable for women to travel outside household, move freely in public, access public institutions.

### 3.2 Transport for the poor

Once the relationship between the livelihood system and transport is understood the next task is to focus specifically on the poor combining the poverty knowledge with an understanding of how transport contributes to livelihoods. Table 5 shows the linkages between access and different dimensions of poverty. The left hand column identifies key items to which poor people require access to achieve sustainable livelihoods. The middle column shows constraints to access facing the poor. Two points are important to note:

- it is important to differentiate between the transport needs and problems of different social groups and design transport interventions appropriate to particular livelihood contexts.
- transport interventions are not always the solution to problems of accessibility – access may be constrained by other factors shown in the right hand column.

**Table 5: Linkages between access and poverty dimensions**

	<b>Factors related to Rural Access</b>	<b>Other factors</b>
Employment	Physical access to job locations. Time/distance/cost. Inadequate transport services/means of transport	Lack of job Opportunities
Land	Distance/Time/Energy to Fields	Size of Holdings/ Cultivable Land/ Insecure tenure/ Population Density/Input price
Technology	Lack of public/private sector institutions to supply and transfer	Not Known Not Understood Expensive Not Available
Information	Limited coverage by Extension Workers, Poor communication links. No Radio. No Telephone Poor Postal Services.	Lack of Extension Workers Poor Extension Services
Credit	Location of Credit Facility	Poor Banking Services Strict Credit Regulations
Education	Lack of schools. Poor transport infrastructure and services. Inefficient, unreliable, unsafe.	Lack of Teachers Limited Educational Materials
Health Services	Lack of Health Centres Poor Access Lack of Transport Services	Limited Personnel Lack of Medicines
Water	Lack of Irrigation	Distance to Supply. Lack of Wells. Water Shortage
Energy	Limited Electricity Decreasing Supply of Wood	Distance to Source Prohibitive cost
Markets	Poor Transport Facilities Poor Location	Poor Marketing System Lack of Fertiliser, Seeds
Transport	Poor Tracks Poor Transport Services Lack of Roads Limited Number of Vehicles	
	<b>Factors related to Urban Access</b>	<b>Other Factors</b>
Income	Lack of physical access to job markets – urban poor have to trade off between long distance to job markets and high costs of housing	Inability to afford housing and land and thus, underdeveloped/ depreciated physical capital. Inability to hold a job
Health	Exposure to diseases, pollution and injuries resulting from traffic and infrastructure developments. Stress related health problems, mental health associated with transport services.	Inability to earn sufficient income for healthy lifestyle. Overcrowded and unhygienic living conditions

Education	Insufficient school places in rapidly growing cities. Inadequate and insufficient transport to school. Journey prohibitively dangerous or expensive.	Lack of constructive activity for school age youth contributing to delinquency and continued gender inequities. Violence deterring school attendance
Water/Energy	Inadequate service provision. Prohibitively high costs. Distance to and reliability of water/energy source.	Illegitimate settlements cannot command public service provision.
Security	Tenure insecurity arising from lack of access to affordable, safe housing. Evictions result in a loss of physical capital, lack of space for income generating activities.	Personal insecurity due to drug related violence, family breakdown and tension in cities caused by visible income inequality
Empowerment	Social illegitimacy prevents access to residence and work. Geographical isolation resulting in some communities being disconnected from jobs and services and the information needed to acquire them.	Sense of isolation and powerlessness, violence and inefficient use of time and resources to make alternative living.
Transport	Inefficient, unreliable, expensive public services. Poor service linkages/coverage. Lack of provision for safety and access for NMTs and walking. Gender discrimination in services	
Source: IT Transport Ltd 1999		

### 3.2.1 What do we know about the transport needs of the rural poor?

Box 2 shows some general characteristics of the transport needs of the rural poor. Boxes 3 and 4 below illustrative examples of best practice diagnostic tools for identifying the transport needs of the rural poor in specific settings. Other diagnostics in presented in the urban sector may also be useful in the rural context. All diagnostics can be disaggregated by gender.

#### **Box 2 Transport needs of the rural poor**

- The majority of journey are for reproductive or subsistence needs
- Less frequent journeys may be essential to livelihood strategies e.g. visiting hospitals or clinics, marketing produce or labour.
- Headloading and/or other physical portorage predominates.
- The poor lack access/ ownership to means of transport
- The poor are time and energy impoverished from meeting transport needs
- Poor people are worst located to access services

### Box 3 Time use diagnostic

Average time spent by rural households on transport for different purposes (% distribution)

Purpose	% distribution
Food Production	25
Fuel	15
Water	30
Grinding	5
Local Market	10
External Crop Market	5
Other	10

Source: Dawson & Barwell (1992)

### Box 4 Mode of transport diagnostic 1

Mode of transport	Transport Output				
	Average Trip Distance (km)	Million tonnes	% share	million tonne per km	% share
Headloading	1.5	113	17.7	170	9.0
Bicycle,	4.5	4	0.5	10	0.6
Tricycle	1.0	2	0.3	2	0.1
Pack animals	2.6	462	71.8	1307	68.6
Animal carts					
Tractor-trailer	5.4	59	9.3	353	18.5
Truck, light commercial vehicle	18.5	4	0.5	64	3.3
All Modes	1.9	644	100	1906	100

### 3.2.2 What do we know about urban poverty and transport?

Some general findings on the transport needs of the urban poor are shown in Box 5. The diagnostics presented in boxes 3 and 4 above may also be adapted for the urban setting and all examples given here can be made more useful through gender disaggregation.

Public transport in cities, where available, presents a wide range of problems for the urban poor. Service delivery surveys are one way to establish the extent of the problems and their relative importance.

### Box 5 Transport needs of the urban poor

- Location of poor settlements in relation to services and employment means the poor often travel longer distances with increasing reliance on public services where too far to walk or cycle. The urban poor's journeys are both expensive and time consuming.
- Poor settlements are often badly served necessitating interchange, lengthy waits and walking times. The prohibitive cost of transport limits movement. Small changes in public transport prices and service levels can make large difference to the mobility of the poor.
- The urban poor cannot afford private cars or motorcycles and do not benefit from automobile-focused transport interventions. In fact they suffer a disproportionate share of external costs.
- Increased dominance of private motorised vehicles in urban transport systems (MVs) (from which the poor are largely excluded) marginalises or displaces non motorised vehicles (NMVs) and public transport (upon which the poor depend heavily).
- Poorest groups rely heavily on NMTs and walking but transport planners often neglect the need to make these more affordable, accessible and safer.
- Poor are especially vulnerable to traffic impacts such as pollution and danger from accidents, partly due to modal choice and poor road use behaviour.

### Box 6 Service delivery diagnostic

% Perceived as Problems with public transport.	Accra, Ghana		Pune, India	
	Male	Female	Male	Female
Overcrowding	6	9	28	41
Too Expensive	8	10	1	3
Inadequate frequency /not enough buses	35	36	54	45
Old/ dangerous vehicles	14	14	0	0
Rude Staff	10	8	5	6
Other	27	23	12	5

Source: Fouracre, P Astrop, A and Maunder, D 1999.

Alternatives to public transport are sought by the urban poor, such as walking and cycling. Cycling is less common in Africa than in many parts of Asia both due to the cost and cultural perception. Cycling can help those alienated from living close to employment by expensive housing to commute greater distances. Cycling also frees some commuters from the limited transport routes of public transport networks.



**Box 7 Mode of transport diagnostic 2**

City	% trips by walking	Average walking distance
Jaipur	39	1.2
Vadodara	40	1.2
Patna	36	1.3
Delhi	40	1.1
Dar Es Salaam	25	1.7
Jos	23	1.2
Douala	28	1.2
Yaounde	30	1.7
Harare	42	1.6

Source: Fouracre, P Astrop, A and Maunder, D 1999.

**Box 8 Mode of transport diagnostic 3**

Cycle use in Indian cities

	Proportion of cycles in traffic %	Proportion of all trips by cycle %
Ahmedabad	38	21
Chandigarth	37	15
Coimbatore	43	13
Cuttack	35	8
Guwahati	14	3
Indore	37	16
Jaipur	49	32
Kanpur	48	30
Lucknow	53	34
Ludhiana	40	23
Mangalore	10	2
Moradabad	43	25
Pune	41	16
Varanasi	33	21

Information on transport costs paid by poor people in urban areas and information on access to services, health, education and water distance to places of employment are also important.

### **Box 9 Transport costs diagnostic**

Data on transport costs paid by poor people should if possible be compared to those incurred by the non poor and between different functional groups of poor people e.g. elderly, men and women (see Table 1) and by gender

- fares to work
- fares to schools, health centres other services
- fares as a percentage of total income/expenditure
- fares per kilometre
- opportunity costs of transport e.g. journey time, waiting time.

### 3.2.3 Transport and Gender

#### **Box 10 Women's transport needs**

- Women's transport needs are different to men's and transport responsibilities of women and men are quite separate. The triple burden of women: *reproductive, productive and community-managing work*, determines women's transport activities and needs.
- Women are time and energy impoverished from meeting transport needs and are generally less mobile than men in the same socio-economic group.
- Gender relations mean women are much less likely to have access to and use transport technology than men. Women have less money and face cultural constraints.
- Existing transport infrastructure, services and technology may be inappropriate for women (e.g. bicycle design) or simply designed around the needs of men. Women's transport activities are much less visible in transport planning.
- Infrastructure and transport services oriented to the needs of women could drastically reduce women's workload in the reproductive sector and free up time and energy for other productive and reproductive tasks.
- Transport planners need to consult with men and women to address intra-household division of labour, multiple and various transport needs and cultural attitudes and norms. Furthermore planners must implement targeted schemes e.g. providing credit for appropriate IMTs or information on how to improve mobility and develop and enforce regulations to ensure women's safety especially walking or on public transport

Boxes 11-13 illustrative examples of best practice diagnostic tools for identifying the transport needs of women.

### Box 11 Comparison of Female-Male Transport Burdens

(tonne-kms per person per year)

	Kasama (Zambia I)	Lusaka Rural (Zambia II)	Mbale (Uganda)	Kaya (Burkina Faso I)	Dedougou (Burkina Faso II)
Adult Females	35.7	30.3	39.0	10.3	15.5
Adult Males	7.1	9.8	8.6	3.6	4.4

Source: Barwell 1996

### Box 12 Division of transport responsibilities in a typical household (percentage)

	Ghana			Makete			Tanga <sup>b</sup>			Zambia		
	F <sup>a</sup>	M <sup>a</sup>	O <sup>a</sup>	F	M	O	F	M	O	F	M	O
1. Domestic Transport												
1.1 Time	70	6	24	80	6	14	86	13	NC	96	1	3
1.2 Effort	71	6	23	87	7	6	86	13	NC	96	1	3
2. Total Transport												
2.1 Time	63	24	13	67	22	12	NC	NC	NC	66	NC	NC
2.2 Effort	66	19	15	84	10	6	NC	NC	NC	72	NC	NC

a. The category F is female adult (women). The category M is male adult (man). The category of 'other' includes all combinations of women and men, women and children, children alone, men and children or whole families.

b. Children were not identified as a separate entity in Tanga for all travel categories, but were sometimes coded into their respective gender. As a result the data may be over-estimating the participation rates for women and men in Tanga.

Source: SSATP

### Box 13 Urban Travel Behaviour, - Modal Choice by Sex

Modal Choice	Female	Male
Walk	38	25
Auto Rickshaw	17	10
Bus	32	25
Cycle	3	15
Motorcycle	10	25

Source: Astrop 1996

## **The Planning Process**

The implementation of sectoral programmes and policies are increasingly devolved to the district or local government. It is now well-recognised that the traditional top-down, sectoral approach to development planning is limited, often inefficient in terms of allocation of resources and ineffective in terms of poverty reduction. There has been a subsequent shift towards integrated development planning which co-ordinates the activities of different sectors towards a common goal i.e. poverty reduction.

The multisectoral role of transport as a facilitator is fundamentally important in integrated development planning. Policy makers need to think of transport in terms of its relationship to a number of interrelated sectors and services. However international experience has shown that the decentralisation of transport planning to the regional, district and local levels is key to increasing poverty-impact. Box 14 shows an example of a Local Level Planning Process that uses some of the diagnostic tools shown above.

### **Box 14 A Local Level Planning Process**

The planning approach adopted here is based upon the work of the ILO on Integrated Rural Accessibility Planning (IRAP).

1. The first stage of needs assessment planning must be to define geographic and sectoral coverage and target groups.
2. The next stage is the identification of priority problems. This must begin with collection of primary and secondary data on existing levels of access to basic goods and services. The data obtained represents an accessibility database comprising 5 main groups of information.
  - general socio-economic characteristics of the area
  - location and quality of facilities
  - transport system inventory
  - travel patterns; and
  - community priorities
3. This data then needs to be processed and analysed to identify main access problems. This information can be represented in the form of accessibility profiles, indicators or maps.

Information on the amount of time and effort the poor spend in gaining access to different livelihood needs, the modes of transport used and the quality of existing services can be combined to produce an Accessibility Indicator for a given service or livelihood need. Als can be combined to produce an overall Accessibility Profile which reflects the level of access to basic goods and services in a given area. Planners can then use Als to:

- categorise or rank communities according to their level of access;
  - compare the level of access to a good or to a service within and between different administrative areas and set realistic local targets;
  - assess the relative significance of access to each different facility;
  - relate the level of access to defined national, regional or local standards; and
  - monitor the development within or between administrative areas
4. Als help planners to identify what services are most needed and where they are most needed. This information forms the basis for the definition and formulation of an intervention strategy. This involves the identification of which out of the range of solutions available will be, given the objectives, most effective in responding to particular needs: improving access through the siting of facilities, or through improvements to people's mobility.

Each phase is intended to be linked to the local level planning and carried out with local authorities and communities involved. The objectives of transport planning interventions should ultimately be defined by the communities involved.

Assessment of the needs of the poor must take the poor themselves as a starting point from which to examine the different factors influencing the desired outcome i.e. in this case the satisfaction of their varied access needs.

## 4. Transport and the enabling environment: pro-poor growth

Investment in transport can create economic opportunities for the poor either directly through employment or income earning opportunities in transport service or infrastructure supply or indirectly by improving conditions for marketing goods and services that poor people produce or for unmarketed services (e.g. household services). The public and the private sector both have a role in providing the transport services and infrastructure that create the macro transport environment. Improving the macro transport environment may not always result in improved livelihood options however. Attention has to be paid to the needs and rights of indigenous people and local communities and to the environmental sustainability of large infrastructure and transport intervention. Finally efforts have to be made to mainstream HIV/AIDS awareness into transport related activities to prevent the greater mobility of people increasing vulnerability to the HIV infection.

### 4.1 Transport and pro-poor growth

Sustained increases in real per capita income are needed to reduce poverty. Creating the pre-conditions for economic growth through macroeconomic stabilisation and provision of supply-side incentives is a recognised policy priority. This section examines the links between transport and the enabling environment. Investment in infrastructure can *contribute to economic growth* through:

- growth of the sector itself
- creation of employment in transport and other infrastructure
- opening up new opportunities for entrepreneurs in transport and other infrastructure services and making existing business more profitable.
- public works that provide employment as a counter cyclical measure to stimulate the economy (or particular regions of it) in recession.
- lowering the costs of inputs used in the production of almost all goods and services
- raising productivity through reducing time and effort needed in production
- opening up new domestic and international markets
- lowering the effective rate of protection of exports
- enabling economies to respond to changes in the location and composition of demand

#### **Box 15 Transport is a non tariff barrier to trade.**

Recent liberalizations have reduced artificial trade barriers and now mean that the effective rate of protection provided by transport costs is for many countries considerably higher than that provided by tariffs. *Halving transport costs increases the volume of trade by a factor of five*

(Limao and Venables, 1999)

#### **Box 16 How Ugandan Entrepreneurs Rank Infrastructure Constraints**

Power breakdown	3.5
Voltage fluctuation	3
Telecoms failure	2.7
Quality of roads	2.6
Land/Industrial space	2.6
Water supply	2.4
Waste disposal	2.2
Commercial trucking	2
Waste water disposal	1.9
Air freight services	1.8
Railway transport	1.7
Ports/shipping	1.6

4=maior problem 1=no obstacle

Inadequate infrastructure can *constrain economic growth* by:

- acting as a non-tariff barrier to trade and exports (see Box 15)
- limiting supply side responses to structural adjustment (see Boxes 15 and 16)

However for effective poverty reduction, policies must ensure that poor people actively participate in the growth process. It cannot be concluded that increased spending on roads will reduce poverty and increase growth everywhere. If the effect of increased investment in transport encompasses the economic activities and sectors in which the poor participate, investment in transport infrastructure will have direct poverty reducing effects. Many of the ways transport can contribute to growth are feedback effects and the poverty outcome will depend on the net effect of outcomes in related product and factor markets on poor people's livelihoods (see Box 39).

The poverty outcome of infrastructure investment is difficult to model and complex market linkages mean that the *relationship is country specific*. Econometric analysis using simultaneous equation models must be carried out at country level to ascertain relative priorities e.g. between primary health, education, transport infrastructure, irrigation and agriculture extension for government spending.

Analysis of costs and productivity of road freight transport is a valuable exercise. Non infrastructure tariffs may present a significant constraint to pro-poor growth and are often overlooked in transport planning. For example a recent study showed freight tariffs in a number of countries to be four to six times higher than in Africa than in Pakistan. Policies to support increased efficiency in the transport service sector can therefore be an important complement to improving transport infrastructure.

**Box 17 Component costs for a tractor and semi-trailer (F FCA per km)**

	Africa	Pakistan
Interest	35.2 (7.6%)	4.3 (4.2%)
Insurance	15.8 (3.4%)	0.1 (0.1%)
Crew	27.9 (6%)	11.0 (10.7%)
Licence and other taxes	7.8 (1.7%)	0.4 (0.4%)
Other fixed charges	42.1 (9.1%)	2.9 (3%)
Depreciation	66.1 (14.3%)	8.9 (8.7%)
Fuel	112.4 (24.3%)	43.7 (42.7%)
Maintenance	90.8 (19.5%)	17.2 (16.8%)
Tyres	48.1 (10.4%)	6.0 (5.8%)
Road expenses	17.3 (3.7%)	7.9 (7.7%)
Fixed costs	128.8	18.7
Distance dependent costs	334.7	83.7
Total costs	463.5	102.4
Total costs per tonne-km	21.7	4.5

Source: Rizet & Hine (1991)

## 4.2 The Role of the Private Sector

Government provision of transport services in many low income countries is economically unsustainable. Transport parastatals often operate inefficiently making large losses and funds for routine maintenance of transport infrastructure and cannot be met from recurrent expenditure allocations to the sector. Poor policies and inefficient service provision absorb scarce fiscal resources and can damage macroeconomic stability, ultimately damaging the prospects for growth and hence the enabling environment for poverty reduction. The 1994 *World Development Report* outlined four options for infrastructure service provision:

- public ownership and operation through a public enterprise or government department run on commercial principles
- public ownership but with private responsibility for all operations (e.g. concessions or leasing of rail, port and airport infrastructure and toll roads)
- private ownership and operation
- community and user provision (e.g. maintenance of feeder roads by communities with some government funding or provision of materials)

There has been considerable commercialisation of main road management in Africa already, but the performance has been varied especially with regards to rural transport. There has been considerable involvement with small scale local contractors in rural road rehabilitation schemes such as in Ghana. The success of such schemes is dependent on the quality of training given to contractors and the effectiveness of ongoing supervision. Local banks are often unwilling to take the risk of providing support in the form of loans which need to be assured by external sources (Howe and Bantje, 1995).

### **Box 18 Commercialisation of road management**

Zambia provides an illustrative case study of road management commercialisation . With over 15, 000 kms of rural roads and 48 Rural District Councils (RDCs) the average road network under each council's authority was less than 350Kms. This is insufficient for the effective provision of a road management programme through a designated district road agency. The National Road Boards, therefore, asked the Association of Consulting Engineers (ACE) to prepare acceptable maintenance programmes for the districts which were then offered to private companies as district wide contracts. The consulting firms in each district now work for the RDCs preparing work programmes, hiring contractors, and supervising the maintenance work.

Heggie, 1996 in Derbyshire and Vickers 1997.

## 4.3 Remote regions and transport infrastructure projects

Large transport infrastructure projects often aim to integrate remote regions into the wider economy and promote trade. However, they can have negative consequences for people's livelihoods as they can:



- accelerate environmental destruction, through providing opportunities to increase extraction of natural resources for international trade
- displace communities and force them to resettle in new locations
- decimate indigenous people through exposing them to disease or conflicts with new migrants to their areas
- destroy cultural sites and national heritages

**Box 19 The World Bank's draft guidelines on Involuntary Resettlement. Draft OP 4.12**

a) Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs.

(b) Where involuntary resettlement is unavoidable, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to give the persons displaced by the project the opportunity to share in project benefits. Displaced persons should have opportunities to participate in planning and implementing resettlement programs.

(c) Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to beginning of project implementation, whichever is higher.

Source: [www.worldbank.org](http://www.worldbank.org)

In light of strong criticism from national and international minority rights and environmental organisations, the World Bank and other donor agencies have produced guidelines to regulate the impact of projects and programmes on minority groups, communities and the environment (boxes 19 and 21 show excerpts from the World Banks Operational Directives on involuntary resettlement and indigenous peoples.

Where people are likely to be adversely affected by transport projects or programmes baseline surveys need to be conducted to:

- provide a census of all affected persons and assets (including environmental ones)
- survey the socio-economic conditions of the affected persons

The *Environmental Assessment Sourcebook* (World Bank, 1992) is an example of a resource to guide assessment of the environmental impact of large scale transport projects.

**Box 20 Baseline Surveys: extract from World Bank OD 4.20**

Baseline data should include (i) accurate, up-to-date maps and aerial photographs of the area of project influence and the areas inhabited by indigenous peoples; (ii) analysis of the social structure and income sources of the population; (iii) inventories of the resources that indigenous people use and technical data on their production systems; and (iv) the relationship of indigenous peoples to other local and national groups. It is particularly important that baseline studies capture the full range of production and marketing activities in which indigenous people are engaged. Site visits by qualified social and technical experts should verify and update secondary sources.

Source: [www.worldbank.org](http://www.worldbank.org)

### **Box 21 Indigenous People World Bank OD 4.20**

Prerequisites of a successful development plan for indigenous peoples are as follows:

(a) The key step in project design is the preparation of a culturally appropriate development plan based on full consideration of the options preferred by the indigenous people affected by the project.

(b) Studies should make all efforts to anticipate adverse trends likely to be induced by the project and develop the means to avoid or mitigate harm.

(c) The institutions responsible for government interaction with indigenous peoples should possess the social, technical, and legal skills needed for carrying out the proposed development activities. Implementation arrangements should be kept simple. They should normally involve appropriate existing institutions, local organizations, and nongovernmental organizations (NGOs) with expertise in matters relating to indigenous peoples.

(d) Local patterns of social organization, religious beliefs, and resource use should be taken into account in the plan's design.

(e) Development activities should support production systems that are well adapted to the needs and environment of indigenous peoples, and should help production systems under stress to attain sustainable levels.

(f) The plan should avoid creating or aggravating the dependency of indigenous people on project entities. Planning should encourage early handover of project management to local people. As needed, the plan should include general education and training in management skills for indigenous people from the onset of the project.

(g) Successful planning for indigenous peoples frequently requires long lead times, as well as arrangements for extended follow-up. Remote or neglected areas where little previous experience is available often require additional research and pilot programs to fine-tune development proposals.

(h) Where effective programs are already functioning, Bank support can take the form of incremental funding to strengthen them rather than the development of entirely new programs.

## **4.4 HIV/AIDS and the transport sector**

The spread of the HIV/AIDS epidemic is driven by the individual behaviours, which put people at risk of exposure to infection, and individual's health status, which can make people more vulnerable to contracting HIV when exposed to it. Transport sector interventions may increase the opportunities for risky behaviour as construction and transport operators are in jobs that keep them away from home from long periods of time and allow them easy access to commercial sex workers. Conversely new roads and infrastructure can bring opportunities for more income earning activities, including from prostitution and drug trafficking. New coping strategies open up for the poor, in previously isolated communities, which can expose them to the risk of AIDS infection.

**Box 22 Campaigns to reduce risk taking behaviour among truck drivers**

In Nepal, for instance, a vigorous campaign to inform truck drivers and sex workers of the risk of unprotected sex, plus provision of condoms at all convenient points along truck routes, successfully cut the risk behaviour of sex worker and transport workers who made up the bulk of their clientele. In areas where the prevention campaign was initiated condom use nearly doubled.. in areas where there was no prevention campaign condom use actually fell over the same period.

Source: UNAIDS June 1998

Prevention of HIV infection requires a multi-sectoral response and the transport sector has an important role as one of the many stakeholders that should be involved in supporting the implementation of national AIDS prevention programmes. The transport sector should liaise with AIDS education and awareness experts and other sector specialist to campaign to prevent the spread of AIDS to workers in their sector (see Boxes 22 and 23).

**Box 23 Recommendations for actions to prevent the spread of AIDS related to the transport sector**

- introduce AIDS communications campaigns into existing and new transport infrastructure projects
- assist communities around trucking routes, ports, border crossings and major transport hubs to develop HIV prevention, care and mitigation programmes
- development of workplace HIV/AIDS prevention and control programmes for transport and construction workers employed by the government and the private sector
- include HIV/AIDS education in transport sector training programmes
- review and revise existing employment conditions that may further the spread of HIV/AIDS
- review and revise existing sectoral, government or company policies to ensure human rights and non discrimination of those infected by the virus

## 5. Critical Policy Issues: Mainstreaming and prioritising

### 5.1 Mainstreaming pro-poor approaches

The contribution of transport policy to poverty reduction strategies is likely to be limited unless there is greater attention to precisely which aspects of poverty are to be addressed. A special effort to involve the poor is needed. Types of pro-poor policy interventions can be categorised into (1) direct or targeted actions, (2) indirect or inclusive actions and (3) enabling actions defined in Box 24. Historically, transport sector investment has orientated to enabling actions and has been less focused on poverty reduction through policies that direct and indirectly impact on poor people's livelihoods.

#### **Box 24 3 Types of pro-poor policy intervention**

- *Direct or targeted actions:* those actions that aim directly and prominently to focus on the rights, interests and needs of poor people; e.g. building rural feeder roads or eliminating impediments to non-motorised transport in cities.
- *Indirect or inclusive actions:* actions which aim to benefit broad population groups including poor people, but which also address equity and barriers to the participation or access of poor people; e.g. ensuring the informal sector is free to operate transport services
- *Enabling actions:* are structural measures aimed at underpinning pro-poor economic growth or other policies leading to social, environmental or economic benefits for poor people; e.g. investing in transport infrastructure that links the poor and their products to national and international markets

### 5.2 Targeted and inclusive policy actions

There are six key areas where well-designed transport policy can help the poor through direct or indirect actions:

- providing adequate transport to places of employment
- eliminating impediments to non-motorised transport
- ensuring the informal sector is free to operate transport services
- eliminating gender bias in transport provision
- focus on increasing accessibility with complementary measures to increase mobility
- increasing local participation in policy formulation and supply

In addition measures need to be taken to avoid or compensate for the adverse social effects of large infrastructure projects on communities and integrate AIDS awareness and prevention into transport sector activities (see sections 4.3 and 4.4 above).

### 5.2.1 Providing adequate transport to places of employment

For poor people, especially those living in urban areas, the cost and availability of transport to work is a major determinant of their ability to participate in labour markets. Pro-poor transport policy actions must weigh up trade off between directly targeted actions and inclusive actions. An illustrative example is shown in Table 6 below.

**Table 6: Trade-offs between directly targeted actions and inclusive actions**

	For	Against
<b>Directly targeted actions</b>		
subsidised routes to poor neighbourhoods	poor living in these neighbourhoods benefit directly from public spending	may be impossible to implement where poverty and location are not strongly correlated
employer based transport subsidies	working poor benefit directly	misses the poor who work in informal sector
<b>Inclusive actions</b>		
general subsidy of public transport so that it is affordable for the poor	encourages use of public over private transport which can reduce pollution and congestion	non poor benefit from subsidy
	politically sustainable as will be supported by poor and non poor	fiscal unsustainability/expense

### 5.2.2 Eliminating impediments to non-motorised transport

The poor do not own motorised forms of transport. Pro-poor transport policy needs address walking, bicycling, use of animal traction and use on small craft in cities and on roads and waterways. There are a number of measures that should be considered:

- Transport infrastructure improvement needs to specifically incorporate provision for non-motorised transport modes in its design. E.g. roads can be designed with provision for pedestrian safety, bicycle tracks and routes for non motorised transport can be incorporated along side routeways designed for motorised vehicles
- Regulations that ban or prohibit non motorised forms or transport should be reviewed and revised
- Tax and tariff policy should be reviewed and revised to ensure that non-motorised forms of transport are not taxed excessively (see Box 25).

### **Box 25 Tax policy constrains the poor's use of bicycles**

Government tax policy is frequently a barrier to the poor's use of bicycles. Tariffs put bicycles out of the reach of the poor in Uganda, Malawi, Ethiopia and Bangladesh and are taxed as a luxury (as they are in France) in many francophone African countries.

The challenge for policy makers is to strike a balance between ensuring that use of non motorised transport does not add to congestion and jeopardise public safety and ensuring that the poor can use the means of transport they can afford.

### 5.2.3 Ensuring the informal sector is free to operate transport services

The informal sector is an important provider of transport services where prices charged by state and formal private sector transport operators put these services out of reach of the poor. Informal transport services also provide important employment opportunities for many poor people. However the sector is often unnecessarily hampered by government regulation and vulnerable to extraction by bribes police and other officials to for licenses to operate in cities.

The issues that should be considered in transport sector policy include:

- revision of government policies which restrict operating licenses of the informal sector
- revision of government policies that impose direct bans on the forms of transport used by informal sector operators
- measures to reduce the incentives for corrupt behaviour of transport officials.

### 5.2.4 Eliminating gender bias in transport provision

Women's transport needs are frequently ignored and gender biases are common in transport planning. Guidelines on incorporating gender issues in transport planning are shown in Box 26.

### **Box 26 Involving women in transport planning: findings from participatory evaluations**

- Negotiated, participatory approaches are of central importance

*'The introduction of women into formal structures should be done gradually and cautiously. If it is made suddenly and foisted on people the males in the society would kick against the idea and render women ineffective'*

- Gender training and awareness needs to respond to demand from transport planners and communities

*'Women cannot be dealt with in isolation. Awareness and sensitisation workshops should be organised for male and female opinion leaders. Where only women are sensitised through workshops, male resistance hardens and the women are not allowed to put into practise the ideas obtained from the workshops'*

Adapted from Derbyshire and Vickers, 1997

Some policies that can reduce the transport burden of women lie outside the sector, for example relocating services closer to the home may be preferable to increasing mobility through transport improvement. So the transport sector needs to be informed of plans and policies relating to public and private service providers in other sectors – health, education and agriculture, for example.

Key policies for improving the gender sensitivity of transport interventions include:

- provision of street lighting and other measures to improve women's safety in public and private transport use
- involving women in transport planning (see Boxes 26 and 27)
- targeting credit schemes to buy means of transport at women
- targeting information at women transporters

### **Box 27 Guidelines on Gender Issues**

#### **Institutional Level**

- Review the impact of legal and regulatory frameworks and transport policy objectives for their impact on both men and women. This should take into account gender, social and economic roles and responsibilities.
- The impact of sector restructuring, the application or lifting of subsidies, or the investment in transport should be examined from the perspective of low income women and men.
- The impact of changes in urban planning should be examined for their transport implications e.g. changes in settlement development, new town developments.
- Consider providing credit to private sector operators and producers of intermediate means of transport, ensuring that time scheduling and IMT designs reflect gender concerns

#### **Community Level**

- Participatory assessments of transport needs of all stakeholders –women, men and children should be carried out, with separate meetings with men and women. Participatory methods will provide the greatest insights into potential positive and negative impacts e.g. mapping exercises
- The range and cost of alternative options should be discussed with communities and an assessment made of their respective impact on the most vulnerable.
- Where communities are expected to maintain transport infrastructure, an assessment of the sense of ownership should be made not only by talking to community leaders but by those expected to carry out the work, men and women separately.

Source: DFID

## 5.2.5 Focus on increasing accessibility with complementary measures to increase mobility

For the rural poor access to local facilities and the primary transport network is most important. This access is provided by paths and tracks, unpaved and unclassified roads and in some countries waterways and coastal routes or air transport which link often remote rural areas to the main transport trunk. In recent years there has been considerable emphasis by donors on the importance of rural feeder roads. However in many cases the poor lack access to transport services and the private sector is incapable of supplying them.

Policy makers need to identify the best solutions to increasing accessibility. Boxes 28 and 29 below illustrate how this might be done. Participatory approaches and information from key informants can be used to decide access weights for facilities (Box 28) and most important ways to address particular access problems (Box 29).

### Box 28 Prioritisation in Accessibility Planning

#### Co-ordinating Activities at Sectoral Level

Facility	Existing Situation	Target	Implications	Organisation
Basic access	30% villages no access	reduce by half	100km of road	MoT
Primary School	1 per 250 children	1 per 150	100 new classrooms	MoE
Water	70% hh >15 mins	100% < 15 mins	150 new water supply systems and	MoE
Fuelwood	30% hh > 30 mins	100% < 30 mins	50 woodlots 2000 fuel-efficient stoves	Local

#### Weighting Access Need to Facilities

Facility	Access Weight
Primary School	5
Health Care Facility	5
Primary Market	4
Water Source	5
Secondary School	3
College	1
Secondary Health Care facility	2
Secondary Market	1
Administrative Centre	3
Post Office	2
Agriculture Extension Centre	3
Nearest post-harvesting facility	3



### Box 29 Addressing access problems

Elements of Accessibility					
Transport Task	Mobility				Siting and Quality of Facilities
	Rural Transport Infrastructure		Means of Transport		
	Rural Roads	Footpaths & Tracks	IMT	Motorised Transp. Serv.	
Water and Firewood Collection		*	*		**
Crop Production	*	**	**	*	*
Crop Marketing	**	*	*	**	*
Access to Economic and Social Services	*	*	*	*	**
Non-agriculture Income Generation	*	**	**	*	

\*\* most important means of addressing an access problem

\* complimentary means of addressing an access problem

An access checklist is shown in Box 30. Other important issues for policy makers to consider include:

- the cost effectiveness of selective repairs/ infrastructure improvements targeted to transport bottlenecks/ trouble spots compared to construction of roads
- links from feeder roads – to the primary, secondary and national road network
- increasing access to transport services
- private public partnerships in supply of infrastructure and transport services
- creating the incentives for private sector transport operators in areas where effective demand is low

### **Box 30 Access Check list**

#### **Infrastructure**

- Improvement/development of tracks, footpaths, footbridges.
- Rehabilitation, maintenance and construction of selected roads

#### **Transport / Mobility**

- Improvement of efficiency of existing low cost Intermediate means of transport (IMT), e.g. animal drawn carts, bicycles, donkeys, trailers
- Development / Introduction of alternative low-cost IMT

#### **Enabling Environment for Mobility**

- Facilitating credits to purchase IMT
- Facilitating transport services by improving their operation and management systems and increasing their availability
- Providing training for the production and maintenance of IMTs

#### **Siting of Facilities and Services**

- Installing safe water supplies
- Better distribution of health centres, schools, etc.
- Improvement of the system of supply of agricultural inputs
- Development of market facilities
- Improved distribution of food processing facilities, e.g. mills

#### **Environmental measures**

- Development of wood lots, introduction of fuel efficient cooking technologies, etc.
- Improved sanitation measures

Based on ILO Guidelines

### **5.2.6 Increasing local participation in policy formulation and supply**

Involvement of the poor in transport planning is desirable. This entails:

- consulting with communities about priority needs
- allocating more expenditure at the local government level to invest in more small scale constructions
- devolving more decision making power to local government regarding setting transport priorities
- using more labour intensive techniques
- using local transport firms to construct local road and other local infrastructure

There is disagreement about the desirability of community-based management and co-financing of rural works by municipal funds and local communities. On the one hand such contributions can enhance sustainability as communities accept ownership of the project. On the other hand these policies can lead to exploitation. Community contributions frequently comprise labour contributions e.g. to road maintenance. Although work is 'voluntary' consultations about the intervention often do not reach those

who actually will be called on to do the work and sometime communities may extract labour from the poorest among them (see Box 31).

### **Box 31 Forced labour or community participation?**

Members of the Kogot women's group in Kenya said that they would be unwilling to maintain roads without reward despite a great problem of isolation because:

- it was the duty of the government
- they were busy on their farms
- the people who use the road come from further on
- it is the responsibility of the elected MP to ensure road construction and maintenance is done by the government

As primary stakeholders who agree to 'solutions' for sustainability are not necessarily the same people who will be called on to provide labour, money and materials for ongoing work, ownership is not necessarily increased by initiatives that devolve responsibility to communities.

Source: Derbyshire and Vickers, 1997.

## 5.3 Prioritising policy action

The first step is to assess whether current policy is *working* to reduce poverty and alleviate transport related constraints to pro-poor growth and the attainment of fiscal stability. The check list in Box 32 shows the sort of issues that should be considered.

### **Box 32 Transport growth and stability checklist**

- Examine the distributive impact of transport policy – distribution of spending and poverty impact across regions, rural/urban, social groups.
- Isolate sources of particular problems, whether supply side (cost effectiveness, efficiency, profitability of provision) or demand side (constraints facing groups or individual users).
- Assess effectiveness and efficiency of public spending on transport.
- Assess the poverty incidence of public spending on transport
- Consider potential for private sector solutions
- Establish linkages between key sectoral and structural policies and programs and identify a priority list of policies to be enacted / changed.
- Assess whether transport sector regulations and policies create opportunities for corruption
- Assess whether transport duties and taxes are regressive. Are duties higher on small vehicles used mainly for local trips than large vehicles used for national freighting? Are non motorised forms of transport taxed excessively?
- Assess if government regulations support the means of transport used by the poor.
- Assess if regulations and standards are appropriate for a low income country. Are standards too high? Could revising standards release money to be used to increase supply?

## Planning transport policy within a wider context

Roads alone do not reduce poverty. As long as road programmes are designed in isolation from the provision of other rural/urban infrastructure poverty impact will be limited. Conventional approaches to transport are not adequate: transport infrastructure and service development needs to be planned within the context of wider development interventions. In rural areas these might include:

- Support the development of rural entrepreneurs
- Seed multiplication and marketing
- Small scale irrigation
- Infrastructure development (roads, water supply, and buildings)
- Pilot agricultural development schemes

### **Box 33 Checklists of wider implications of upgrading rural roads**

Roads can create other needs outside the remit of the proposed project which need to be understood by policy makers in designing transport related interventions.

#### 1. Livelihood Checklist:

- Establish the baseline (pre-project situation)
- Which tasks or activities will be made easier by the road.
- Does the potential benefit depend on other facilities being available (eg credit).
- Will there be any livelihoods , such as those of roadside traders that are detrimentally affected by road improvement and what can be done to ensure safety.
- Where will the road building team be accommodated and what impact will there be on the local community?
- What compensation measures are there for land lost to road construction.

#### 2. Resources Checklist

- Will the new road be accessible for all user groups.
- Will any groups be excluded from benefiting as a result of negative impacts? For example if the road was previously used for crop drying, will alternative areas be made available for this?
- Drainage and run-off
- Participation including farmers adjacent to road
- Health concerns

#### 3. Knowledge Checklist

- Will indigenous knowledge be used in the design (e.g. how high to build bridges to survive floods)
- Is the Public Works Department /Construction team equipped to find out local needs and use local knowledge in project design?

#### 4. Rights Checklist

- How are local communities to be informed about the road?
- Will local users be responsible for maintenance? If so have, have representative groups, including community leaders, been involved in agreeing to this policy?
- What incentives exist for communities to repair the road
- Are there legal provision to reduce the health risks of increased speed on the road?
- Are these laws fairly and equitably applied?
- Has additional road safety education been adopted by schools adjacent to the new route?

- Fertiliser supply
- Institutional support and capacity building
- Primary education and adult literacy
- Primary health care and child immunisation
- Access to clean water and sanitation

Equally the implication of transport interventions for other sectors needs to be understood and communicated to the relevant stakeholders. Transport sector interventions should be assessed in terms of their wider effects on livelihoods, resources, knowledge and rights. The box above gives an example for the implications of upgrading rural roads.

## 6. Monitoring and Evaluation

### 6.1 Defining Terms

A distinction can be made between monitoring and evaluation. 'Monitoring' refers to tracking input, process and output indicators as well as determining impact during project implementations either directly through impact indicators or indirectly through proxies. 'Evaluation' refers to an assessment of the changes in individuals' well-being that can be attributed to a particular programme or policy. These can be undertaken both during and after the project, as referred to in the World Bank PRSP Sourcebook 2000.

Other important definitions include:

- *Goals*: Objectives that the project should achieve. Often expressed in non-technical terms as 'eradicate hunger' or 'eliminate poverty'.
- *Indicators*: Variables used to measure progress toward the goals.
- *Targets*: Quantifiable levels of the indicators that a country or society wants to achieve at a given point in time.

Monitoring during and after the project/programme

As noted above, 'monitoring' refers to tracking input, process and output indicators as well as determining impact during project implementation either directly through impact indicators or indirectly through proxies. Monitoring of actions potentially takes place at various points in the project or programme cycle, covering:

- *Inputs*: the means by which projects are implemented – usually disbursements as proxies for goods and services used in interventions.
- *Processes*: the approaches used in the interventions.
- *Outputs*: the physical products delivered.
- *Outcomes*: the results of the project in relation to its aims.
- *Impact*: its effect upon levels of poverty.

### 6.2. Outcome monitoring

The PRSP Sourcebook defines outcome monitoring as 'tracking the progress in achieving goals'. Specifically, outcome monitoring is aimed at monitoring trends in

outcomes *over time* and *across groups and areas*; collecting information to study the determinants of such outcomes (see Poverty knowledge checklist in section 2.2 of this Toolkit); and providing feedback to policymakers on the effectiveness of poverty reduction efforts. This type of monitoring is not the responsibility of the transport sector, although a number of the indicators at the National level include those for which the transport sector should hold data e.g. annual registration of vehicles by type; kilometres of roads rehabilitated by type; number of persons per vehicle.

### **Monitoring for the transport sector**

#### *a) Monitoring inputs, processes and outputs*

These are not specifically poverty focused, but refer to the monitoring of the implementation process and the physical products delivered. It is not within the remit of this toolkit to deal with these issues and transport sector personnel should look to sector specific guidelines. It is important to note however that for the transport sectors the monitoring of contractors is particularly important, both during and after implementation. As a suggested guide, during and after implementation, monitoring is needed to assess:

- Contract compliance, including volume and quality of work outputs e.g. road length and surface quality.
- Environmental and social equilibrium e.g. workcamps and roadworks should cause minimum damage (see Sections 4.3 and 4.4 of this Toolkit).
- Any damage should be made good upon completion.
- Financial accountability.
- Good employment practices (see Section 4.4. of this Toolkit).
- Contractors on aid-funded projects are not provided with any undue competitive advantage
- Maintenance and up-keep of new road, including the need for capacity building if necessary

#### *b) Monitoring outcomes and impacts*

Monitoring outcomes and impact is more complex and involved linking outputs to poverty-related goal. This is done through using a number of carefully chosen indicators.

### **Indicators**

In order to assess the outcomes or impacts on the poor, outputs need to be linked to poverty-related indicators. This implies that indicators must be complementary to improved initial poverty reduction analysis and preparation of interventions. Baseline studies and control groups are also important in order to be able to disaggregate and attribute effects to particular actions.

Box 34 The PRSP Sourcebook (World Bank, 2000) notes five features of good indicators:

- Direct and unambiguous measure of progress – more (or less) is unmistakably better.
- Is relevant – it measures factors that reflect the objectives.
- Varies across areas, groups, over time, and is sensitive to changes in policies, programs, institutions.
- Is not easily blown off course by unrelated developments and cannot be easily manipulated to show achievement where none exists.
- Can be tracked (better if already available), is available frequently, and is not too costly to track.

Source: World Bank 2000

Indicators should be selected carefully. Merely increasing the number and complexity of indicators may not be useful. Monitoring is expensive and although more stringent techniques may provide more reliable data, there is a trade-off between reliability, usefulness and sustainability. More complex data may be useful to some, however given that it is important to share such information with project beneficiaries, indicators should be readily understood and easily used. Bearing this in mind and the fact that, as for other sectors, indicators will depend on project goals, transport sector indicators that may be included are shown in Box 35.

#### **Box 35 Indicators for the transport sector**

- Number of vehicles
- Vehicle mix – motorised and non-motorised forms of transport
- Number of accidents
- Socio-economic situation of road users
- Average trip distance
- Frequency of external village
- Number of months per year during which the road is impassable
- Time spent on transport tasks by men and women
- Average share of household expenditure on transport by rich and poor, rural and urban
- Time taken to get to school
- Time taken to get to hospital
- Time taken to get to market

#### **Methods of monitoring**

There are a number of different methods that can be used for monitoring. The World Bank PRSP Sourcebook (2000) provides a number of guidelines to the successful development of a monitoring system. Other guides are readily available and we advise you to consult with the relevant publications. In brief, however, the following all encompass methods for monitoring:

- participatory
- self-assessment
- community assessment
- stakeholder feedback

#### **Modifications during the project cycle**

Interim monitoring findings are valuable especially with regard to those impacts visible at an early stage or requiring mitigatory measures. The lessons learnt can be incorporated during the implementation phase. Moreover, these should be disseminated widely e.g. public and private bodies, in order that they also may learn from the findings.

## 6.3 Impact Evaluation

Impact evaluations assess the changes in individuals' well-being that can be attributed to a particular program or policy. The PRSP Sourcebook also uses the word evaluation to refer to studies during the life of the project. 'By providing feedback during the life of an intervention of public action, impact evaluation helps improve the effectiveness of programmes and policies' (PRSP Sourcebook p.3). Impact evaluations will feedback into the project in order to help improve effectiveness. It is a decision-making tool for policymakers and makes public accountability possible. Information generated by impact evaluations informs decisions on whether to expand, modify, or eliminate a particular policy or programme and is used in prioritising public actions. Final impact evaluations should be undertaken sufficiently long after completion for impacts to have become apparent (usually 5-10 years). These should assess the poverty impact and provide lessons learned to be incorporated in future projects.

### **Box 36 Questions addressed in impact evaluations**

- 1) Does the project/programme achieve the intended goal?
- 2) Can the changes in poverty outcomes be explained by the project/programme, or are they the result of some other intervening factors occurring simultaneously?
- 3) Do project/programme impacts vary across different groups of intended beneficiaries (males, females, indigenous people), regions, and over time? If so, what are the cultural, economic, and political factors that limit the full participation of women or other vulnerable groups in the project/programme benefits?
- 4) Are there any unintended effects of the project/programme in comparison with alternative interventions?
- 5) Is the project/programme worth the resources it costs?

Source: World Bank (2000) PRSP Sourcebook

### 6.3.1 Why are impact evaluations important?

Evaluations are not only a tool for providing information to managers but also enhance participation. They are a way of involving and consulting stakeholders, which should in turn enforce accountability and enhance trust. Evaluations can also be used to reinforce more positive approaches to gender if women are included. Furthermore, the voicelessness of certain groups e.g. the poorest, can be addressed if specific measures are taken to include them. Essentially, the evaluation should encompass as many stakeholders as possible, although primary stakeholders remain the most important. Evaluations can also open up debate and negotiation between actors through which all the community (and the project workers) can see themselves in a wider context.

#### **Methodology**

Firstly, it is important to note that in order to be evaluated the objectives to be achieved should be clearly set out and understood. Secondly, it is very difficult to do undertake evaluations without prior information. Therefore, baseline data, control groups, good appraisal, and needs assessments are all important in order to be certain of impact



assessment. If these sources of data are lacking, retrospective methods can provide some data but are not ideal.

The methodology may vary with context and stakeholders, but essentially the method chosen should be designed to meet the requirements of the task. It may include a mix of formal interviews, focus group discussions, visual observations, surveys etc. Given that the evaluation should attain a wide spread of perceptions from different stakeholders, it is appropriate to mix and match methods according to different groups. Using a variety of methods is also appropriate in order to find out a variety of types of information and is useful in order to cross-check the data collected. Boxes 37 and 38 show examples of poverty, social and economic impact assessments.

### **Box 37 Assessing the Poverty Impact of Rural Roads Projects in Vietnam**

The goal of the Vietnam Rural Transport Project is to raise living standards in poor areas by rehabilitating existing roads and bridges and enhancing market access. The Impact Evaluation should determine how household welfare is changing in communes that have road project interventions compared to ones that do not. The key issue for the evaluation is to successfully isolate the impact of the road from the myriad of other factors that are changing in present-day rural Vietnam. The evaluation began concurrent with project preparation, in early 1997, and is in process. Consequently no results are available yet. The evaluation is one of the first comprehensive attempts to assess the impact of a rural roads project on welfare outcomes i.e. to assess whether the project is really reducing poverty. The design attempts to improve upon earlier infrastructure evaluation efforts by combining the following elements: 1) collection of baseline and follow-up survey data; 2) including appropriate controls, so that results are robust to unobserved factors influencing both programme placement and outcomes; and 3) following the project long enough (though successive data collection rounds) to capture its full welfare impact.

The design of the impact evaluation centres on baseline (pre-intervention) and follow-up (post-intervention) survey data for a sample of project and non-project communes. Appropriate controls can be identified from among the non-project communities through matched comparison techniques. The baseline data allows before-and-after ('reflexive') comparison of welfare indicators in project and control group communities. In theory the control group, selected through matched comparison techniques, is identical to the project group according to both observed and unobserved characteristics so that resulting outcomes in programme communities can be attributed to the project intervention.

Data collection for the purposes of the evaluation include commune- and household-level surveys, along with district-, province- and project-level databases. The baseline and follow-up commune and household surveys were conducted in 1997 and 1999, and third and fourth survey rounds, conducted at two-year intervals, are planned. The survey sample includes 100 project and 100 non-project communes, located in 6 of the 18 provinces covered by the project. Project communes were selected randomly from lists of all communes with proposed projects in each province. A list was then drawn up of all remaining communes in districts with proposed projects, from which control communes were randomly drawn. Propensity-score matching techniques based on commune characteristics will be used to test the selection of controls, and any controls with unusual attributes relative to the project communes will be dropped from the sample.

The commune database draws on existing administrative data collected annually by the communes covering demographics, land use and production activities, and augmented with a commune-level survey conducted for the purposes of the evaluation. The survey covers general characteristics, infrastructure, employment, sources of livelihood, agriculture, land and other assets, education, health care, development programs, community organisations, commune finance and prices. These data will be used to construct a number of commune-level indicators of welfare and to test programme impacts over time.

The main objective of the household survey is to capture information on household access to various facilities and services and how this changes over time. The questionnaire covers employment, assets, production and employment activities, education, health, marketing, credit, community activities, access to social security and poverty programmes, and transport. Due to limited surveying capacity in-country, no attempt is being made to gather the complex set of data required to generate a household level indicator of welfare e.g. income or consumption. However a number of questions were included in the survey that replicate questions in the Vietnam Living Standards Survey (VNLSS). Using this and other information on household characteristics, regression techniques will be used to estimate each household's position in the national distribution of welfare. A district-level database was also compiled in order to put commune-level data into context. Each of these will be repeated following the commune survey schedule. A province level database was also established to understand the selection of the provinces into the project. Finally, a project-level database for each of the project areas surveyed was also constructed, in order to control both for the magnitude of the project and its method of implementation in assessing project impact.

The baseline data will be used to model the selection of project sites focusing on the underlying economic, social and political economy processes. Later round will then be used to understand gains measurable at the commune level. The analytical approach will be of 'double differencing' with matching methods. Matching will then be used to select ideal controls from among the one hundred sampled non-project communes. Outcomes in the project communes will be compared to those found in the control communes, both before and after the introduction of the road projects. The impact of the programme is then identified as the difference between outcomes in the project areas after the programme and before it, minus the corresponding outcome difference in the matched control areas. This methodology provides an unbiased estimate of project impacts in the presence of unobserved time invariant factors influencing both the selection of project areas and outcomes. The results will be enhanced by the fact that the data sets are rich in both outcome indicators and explanatory variables. The outcome indicators to be examined include commune level agricultural yields, income source diversification, employment opportunities, land use and distribution, availability of goods, services and facilities, and asset wealth and distribution.

*Source: World Bank (2000) PRSP Toolkit and van de Walle, D. (1999).*

### **Box 38 A Social and Economic Impact Assessment of the Rehabilitation of the Chalinze-Segera-Tanga Road, Tanzania.**

In 1998 Danida Copenhagen decided to undertake an economic and social impact assessment study of the Danida assisted Chalinze-Segera-Tanga Road Rehabilitation Project (CSTRRP). The scope of the study goes beyond a consideration of the achievement of the project's original economic and transport objectives to include a social impact assessment. This was designed to focus on the poorer groups living in the road's zone of influence. Major findings include:

#### Economic impact:

- The project reduced freight costs by approximately 30% and reduced passenger travel costs by a comparable amount;
- Investment in the project was economically worthwhile and has achieved an EIRR of 15.9%;
- Increase in traffic flows;
- Increase in number of road accidents.

#### Transport impact:

- Commodity flows of agricultural and other goods have more than doubled. Mainly inter-regional movement of agricultural produce as well as other freight.

#### Social impact:

- Reduced travel and transport costs;
- Poverty levels in Coast and Tanga districts appear to have worsened and the road has been neutral in this process;
- Road appears to have assisted households to adapt to this deteriorating situation by encouraging:
  - a) Out migration: greater level of contact, remit more money than off-road counterparts
  - b) Higher sale of crops – positive trend to more commercialisation though there is a risk of a household undermining their nutritional status
  - c) Higher levels of expenditure and more diversified income sources in agriculturally favoured areas
  - d) Better access to hospitals – roadside households use hospitals more often than their off-road counterparts. Off-road households rely on health clinics, which are reported to have less reliable medical supplies
  - e) More travel involving a higher number of walk journeys
  - f) Significant savings in the time of travel – all roadside households spend less time and money in meeting their travel and transport needs than do off-road households
  - g) More roadside businesses and markets
  - h) Increased firewood/charcoal production

### 6.3.2 Participation in evaluation

Participatory evaluation is important in order to understand the impact of the transport input on the various stakeholders. There are different levels of participation: inform; consult; active involvement; assuming responsibility; self management. There need not be the same level of participation throughout the project cycle, though it is unlikely that high levels of participation would be achieved in an evaluation of a programme which previously demonstrated low levels of participation in earlier stages. It should be noted however that for good results, participatory evaluations require well trained staff with the appropriate facilitation skills.

### 6.3.3 Taking gender into account

Distributional benefits from investment in the transport sector should be considered. The impacts of roads on women, social patterns and on poverty have seldom been addressed in detail by evaluations, since most evaluated projects were prepared before social concerns reached their current level. A gender-responsive evaluation of benefits should therefore indicate on a gender disaggregated basis the expected benefits that support sustainable livelihoods in terms of increased skills, investments and/or assets. The direct and indirect effects on female income, production and transport burden, and social networks should form a major part of the analysis.

#### **Box 39 Checklist for good evaluation practice**

- Is the purpose of the evaluation specified?
- Are the issues expressed precisely?
- Is there a good level of participation in the evaluation? Will multiple/all stakeholders be involved?
- Is there a gender dimension to the evaluation?
- Will stakeholders and consultants be given copies of draft reports (wherever possible) for comments which should then be included/assessed?
- Is the system of evaluation clear and easily understandable?
- Is the evaluation team made up of a representative group of people, i.e. are there any women on the evaluation team?
- Was the evaluation team contracted by competitive tender?

Evaluating transport sector inputs is complex. As van de Walle (2000) notes, '[T]he key issue for the evaluation is to successfully isolate the impact of the road from the myriad of other factors that are changing in present-day [rural Vietnam]' (see Box 37). Transport interventions have two main effects 1) reducing poverty indirectly through increasing growth, and 2) reducing poverty directly by increasing access to income earning opportunities. It is very difficult to monitor transport interventions and their impact on poverty outcomes because many of the effects of investment in infrastructure are feedback effects – adjustments in prices and quantities in markets that are related to infrastructure markets. Thus the evaluation of the impact of investment in infrastructure on economic growth and poverty reduction requires a general equilibrium approach and the impact of intervention in infrastructure on poverty will depend on the net effect of outcomes in related product and factor markets on poor people's livelihoods.

Within the livelihoods framework livelihood outcomes are attributable to a range of assets, and the institutions and processes that govern their use. Hence, impacts will be attributable to a range of interventions originating across/within different sectors, of which transport is one. The evaluation indicators below are useful in the context of a national, regional or local poverty reduction strategy that aims to improve the livelihood outcomes of the poor. Tables 7 and 8 include a number of indicators which may indicate a change in the asset base or the institutional processes due to a range of interventions, of which transport may be one.

**Box 40 Markets are interlinked and poverty outcomes depend on the net effects of changes in labour and product markets on poor people's incomes**

In India, state expenditure on agricultural research and extension, improved roads irrigation and education had all contributed significantly to the total factor productivity growth in agriculture. In turn, total factor productivity growth and investments in rural roads, education and health have all contributed to increases in agricultural wages. And state expenditures on rural development, soil and water conservation, rural roads, health and literacy have promoted growth of agricultural output. But increased total factor productivity also lowers agricultural prices and increase landlessness. In the case of India the net effect is to reduce poverty as the poor are net buyers of food grains and hence benefit from lower prices and the increased landlessness effect is more than outweighed by the positive effects of increased agricultural wages, non agricultural employment and agricultural productivity on rural livelihoods.

*Source:* F. Shenggen, P. Hazell and Sukhadeo Thorat (1999)

**Table 7: Evaluation indicators checklist relating livelihood assets to transport  
(link to table 3)**

<b>Capital Asset</b>	<b>Evaluation indicator</b>
1. Natural capital	<ul style="list-style-type: none"> <li>• Air pollution</li> <li>• Noise pollution</li> <li>• Soil erosion (slope instability)</li> <li>• Soil degradation</li> <li>• Wood for fuel</li> <li>• Land availability/demand</li> <li>• Common land available</li> </ul> <p>(see World Bank Environmental Assessment Sourcebook for more details)</p>
2. Social capital	<ul style="list-style-type: none"> <li>• Trip frequency to nearest urban area</li> <li>• Frequency of trips external to village</li> <li>• Number of trips to market</li> <li>• Voting patterns</li> <li>• Attendance at public meetings</li> <li>• Migration levels</li> <li>• Remittances sent/received</li> <li>• Visits by urban residents to relatives in village</li> </ul>
3. Human capital	<ul style="list-style-type: none"> <li>• Days teacher at school per week</li> <li>• School attendance by gender</li> <li>• Attendance at hospital, health clinic, dispensary</li> <li>• Visits by extension service personnel</li> <li>• Time spent on travel</li> <li>• Effort spent on travel (headloading amount etc.)</li> <li>• Distances walked</li> <li>• Water consumed</li> <li>• Waterborne disease</li> <li>• Number of road accidents – fatalities and injuries</li> <li>• Socio-economic classification of those involved in accidents</li> <li>• Incidence of alcohol consumption</li> <li>• Incidence of drug use (including tobacco)</li> </ul>
4. Physical capital	<ul style="list-style-type: none"> <li>• Farm vehicles (motorised and non-motorised) in use</li> <li>• Bicycle ownership</li> </ul>
5. Financial capital	<ul style="list-style-type: none"> <li>• Level of savings</li> </ul>

**Table 8: Evaluation indicators relating to institutional processes and transport sector**

Institutional Processes	Evaluation indicator
1. Local government	<ul style="list-style-type: none"> <li>• Number of people voting</li> <li>• Visits to the village by local government officials</li> <li>• Trips to local government offices e.g. to ask for extension services</li> <li>• Participation in meetings</li> <li>• Knowledge of local representatives e.g. names, responsibilities, contact details</li> <li>• Membership of community or political organisations</li> </ul>
2. National government	<ul style="list-style-type: none"> <li>• Number of people voting in National elections</li> <li>• Knowledge of politicians and political party policies</li> <li>• Knowledge of policies</li> <li>• Visits of Member of Parliament to constituency</li> </ul>
3. Firms	<ul style="list-style-type: none"> <li>• Number of enterprises supplying transport related services</li> <li>• Sales of transport goods and inputs – bicycles, tyres, axles etc.</li> <li>• Provision of transport services: taxis, buses</li> </ul>
4. NGOs	<ul style="list-style-type: none"> <li>• Extension services</li> <li>• Credit provision</li> </ul>
5. Laws	<ul style="list-style-type: none"> <li>• Road safety laws and bylaws</li> <li>• Number of prosecutions for traffic safety violations</li> </ul>
6. Gender relations	<ul style="list-style-type: none"> <li>• Number of women on bicycles</li> <li>• Women’s involvement in income-generating activities</li> <li>• Membership of organisations/women’s organisations/credit &amp; saving groups</li> </ul>

#### 6.3.4 Dissemination of information and incorporation of knowledge

It is important that all information and resulting knowledge from the evaluation is made widely available. In terms of participation beneficiaries and stakeholders should be informed of the findings. Best practice should also be widely circulated to those in both the private sector and local government in order that lessons learnt can be incorporated in future approaches.

#### **Box 41 Checklist for dissemination of information and incorporation of knowledge**

- Is the evaluation documented and readily available and fully accessible, both in terms of form and language and in terms of availability and distribution?
- Is the evaluation presented with a clear and self-explanatory summary?
- Have stakeholders been fully informed as to the findings of the evaluation?
- Is there a formal system for incorporating findings into future and ongoing projects?

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