DFID Department For International Development

GUIDELINES FOR CONDUCTING COMMUNITY ROAD SAFETY EDUCATION PROGRAMMES IN DEVELOPING COUNTRIES

Unpublished Project Report
PR/SE/090/04
Project Record No. R8011

GLOBAL ROAD SAFETY PARTNERSHIP

CSIR TRANSPORTEK

BRAC

IRTE

DFID Department For International Development

PROJECT REPORT PR/SE/090/04

GUIDELINES FOR CONDUCTING COMMUNITY ROAD SAFETY EDUCATION PROGRAMMES IN DEVELOPING COUNTRIES

Sector:	Transport
Theme:	T1: Improve transport safety and reduce the impact of accidents particularly for poor people in rural and urban areas
Project Title:	Guidelines for Conducting Community Road Safety Education Programmes in Developing Countries
Project Reference:	R8011

		APPROVALS	
Project Manager		Quality reviewed	

Transport Research Foundation Group of Companies
Transport Research Foundation (a company limited by guarantee) trading as Transport Research Laboratory. Registered in England, Number 3011746.
TRL Limited. Registered in England, Number 3142272. Registered Offices: Crowthorne House, Nine Mile Ride, Wokingham, Berkshire, RG40 3GA.

CONTENTS

ABBREVIATIONS

AADT	Annual Average Daily Traffic
AIDS	Acquired Immune Deficiency Syndrome
AKAB	Awareness, Knowledge, Attitude, Behaviour
AMREF	African Medical and Research Foundation
ASA	American Statistical Association
AYOC	Ashaiman Youth Organisation Coalition
BRAC	Bangladesh Rural Advancement Committee
CBD	Central Business District
CBO	Community Based Organisation
CRSE	Community Road Safety Education
CSIR	Centre for Scientific and Industrial Research
CTW	Community Traffic Wardens
DALY	Disability Adjusted Life Years
DC	Developed Countries
DETR	Department of the Environment, Transport and the Regions
DFID	Department for International Development
EMS	Emergency Medical Services
ERRM	Eastern Region Roads Maintenance
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GPRTU	Ghana Private Road Transport Union
GRSP	Global Road Safety Partnership
HIV	Human Immunodeficiency Virus
HMC	Highly Motorised Countries
IFRTD	International Forum for Rural Transport and Development
IMT	Intermediate Means of Transport
IRTE	Institute of Road Traffic Education
LAC	Latin American Countries
LTSA	Land Transport Safety Authority
MAAP	Microcomputer Accident Analysis Package
ME	Middle Eastern
MTU	Motor and Transport Unit
NGO	Non-Government Organisation
NIMCOSS	Nimba Community Support Services
NMT	Non-Motorised Transport
ODA	Overseas Development Administration
PA	Participatory Appraisal
PET	Participatory Educational Technologies
PLA	Participatory Learning and Action
PRA	Participatory Rural Appraisal
PUA	Participatory Urban Analysis
PIARC	World Road Congress
ROSPA	Royal Society for the Prevention of Accidents
RSE	Road Safety Education
SAPS	South African Police Services
SMART	Specific, Measurable, Agreed, Realistic and Time-limited
SSI	Semi-Structured Interview
STEP	Safety in Traffic Education Programme
TMA	Tema Municipality Assembly
URRENO	Uganda Road Accident Reduction Network Organisation
WHO	World Health Organization

GUIDELINES FOR CONDUCTING COMMUNITY ROAD SAFETY EDUCATION PROGRAMMES IN DEVELOPING COUNTRIES

INTRODUCTION

PURPOSE OF THE GUIDELINES

Welcome to the Guidelines for Conducting Road Safety Education Programmes in Developing Countries. These Guidelines have been written in response to a demand for road safety education programmes aimed at the wider community, and are not intended simply for formal school based education programmes. The Guidelines can be used to promote informal community-based education for adults and children to avoid neglecting those outside the school environment. It is presented as an advisory document that aims to be appropriate for local conditions, while advocating community ownership of road safety education programmes.

The Guidelines are not written specifically to target road safety on either rural or urban roads. Nor do they provide boundaries for the size or area of the community to be targeted. The four case study reports provided in Appendix A successfully applied the community approach to both relatively self-contained rural villages as well as densely populated urban neighbourhoods containing many transient workers. One case study involved a 'linear' village on both sides of a major national highway. To succeed it is important that the residents of the area covered have some common feeling of identity and would share in any improvements to their environment. However, it needs to be recognised that is much easier and often more productive to work in an area where the people are more permanent - and easier to locate - than in areas where there are large numbers of transient residents that are simply passing through the community rather than belonging to it.

What are the Guidelines?

These Guidelines work through the process of establishing a community road safety education programme (CRSE). They begin with an overview of community road safety education and background to road safety trends, and then describe how to carry out activities that lead to the goal of CRSE. These activities include preparation for such a programme, and the methodological process for identifying the road safety problems in a community. They also provide guidance on appropriate interventions and materials for conducting programmes, as well as monitoring and evaluation of impact on beneficiaries.

The Guidelines are designed to be used like a cookery recipe book. Different stakeholders will be involved at various levels of planning, design, implementation, monitoring and evaluation, and so they can choose relevant sections that are appropriate to their input to the process of programme development without having to read the whole document. The Guidelines do not provide all the answers, but do map out the key issues for conducting a successful programme and also suggest where to find more detailed information.

Who are the Guidelines for?

The Guidelines are principally aimed at transport safety practitioners. However, an effective community road safety education programme cannot be formulated without first having consulted a wide range of stakeholders. As a result, the Guidelines will also be

useful to road safety officers, transport planners, school teachers, community development workers, non-governmental organisations (NGO), community based organisations (CBO), consultants, donors, private sector organisations and others who may share an interest in CRSE.

These Guidelines were produced with the support of the UK's Department for International Development (DFID). As a result, in order to meet their particular objectives, the Guidelines primarily focus on helping the poor. Hence they are more suited to improving the knowledge and behaviour of pedestrians rather than, for example, car drivers who tend to be more affluent.

What are the knowledge sources to be used in conjunction with these Guidelines?

There are a number of documents that these Guidelines complement both in terms of subject matter and in providing more detailed information. Detailed references can be found in the Reference Section but include:

Document	What does it contain?	Where can I find it?
Overseas Road Note 17: Road safety education in developing countries	Guidelines for good practice road safety education in primary schools.	Available from TRL as a manual and on the 'Road Engineering for Development' CD, and on the Transport-Links web-site, under publications: www.transport-links.org
Towards safer roads in developing countries	A guidance manual outlining safety conscious design principles, accident prevention and reduction.	Available from TRL as a lecturer's slide pack on CD to accompany the manual.
Improving road safety education in developing countries: India (2000) TRL 442 Ghana (1997) TRL 265	Case study examples of road safety education programmes in Sub-Saharan Africa and South Asia.	Published reports available from TRL.

How to use the Guidelines?

The Guidelines are designed to take the reader through each stage of the community road safety education process. It provides options for identifying problems and issues, and provides interventions that are appropriate to a community environment. It caters for the inclusion of pre-school children, school leavers and children, as well as adults who may or may not have attended school. The process starts with preparation of CRSE activities, to identify relevant stakeholders and beneficiaries and to consult them on priority road safety issues. This is followed by identification of the 'problem statement', and development and implementation of appropriate interventions and educational materials. Figure 1 provides a colour coded overview of the overall structure and contents of the Guidelines which are made up of:

Section 1: Overview

The Guidelines begin with an overview, describing what community road safety education is and where the demand for CRSE programmes originates.

Section 2: Road Safety in Developing Countries

This sets the scene for the Guidelines, aimed primarily at developing countries, by describing the contrasts in road safety between developed and developing countries. It provides background information on current and forecasted global road safety trends, and highlights vulnerable groups (including children, the elderly and infirm, as well as the absolute poor) who are most susceptible to road traffic accidents. It also highlights the impacts of road accidents on the livelihoods of the poor, their sustainability, empowerment and capabilities for escaping the poverty cycle.

Section 3: Preparation for Community Road Safety Education Activities

Perhaps the most critical stage of developing a CRSE programme is its preparation. For such programmes to be effectively implemented in areas of accident 'hot-spots' where the poor reside, a funding mechanism is first required to sponsor the development of the programme, with the 'buy-in' of key stakeholders and beneficiaries. Hence, this section describes how funding support can be sought and CRSE partnerships with NGOs and CBOs developed. It also advises how to identify appropriate stakeholders, and undertake community consultation for the design and planning of any programme.

Section 4: Problem Identification

In order to develop appropriate interventions for a CRSE programme, it must first identify and prioritise the road safety 'problem' for which the programme is being developed. This section recommends ways in which information gathering, using a variety of quantitative and qualitative 'participatory' approaches and methodologies, then assists in identifying the road safety issues for which appropriate education strategies can be formulated.

Section 5: Developing Interventions

This section provides a selection of intervention materials that can be used to disseminate road safety education to the wider community in a format that does not exclude non-school going road users. It highlights effective means of dissemination and proposes how 'training of trainers' in a community setting can raise awareness in a sustainable manner.

Section 6: Linking Community Programmes to other Activities

To ensure the optimum effectiveness of a CRSE programme, it is important to link them to other national, regional and local community programmes to sustain long-term support for the programme. Road safety strategies can be devised in partnership with associated sectors, especially health and education; and enforcement agents, principally the police. Approaches for linking community programmes to other activities are also proposed here.

Section 7: Monitoring and Evaluation

Monitoring and evaluation is a requisite for any CRSE programme, in order to measure the impact of intervention materials on the target beneficiaries. Monitoring involves the collection of data on the process of a development intervention *while it is being undertaken,* while evaluation is concerned with the assessment of the impact *during and after* the intervention has taken place. This section outlines appropriate monitoring tools and measurable indicators that are suitable for assessing the impact of CRSE on knowledge, behaviour and road accident rates among vulnerable groups.

Section 8: Sharing Knowledge and Experiences

The final section provides guidance on how to share knowledge and experiences amongst road safety practitioners, and also considers both the acquisition of knowledge and

dissemination of community road safety education materials and training amongst community representatives.

The Appendices come in four parts. Appendix A contains four separate 'case study' summary reports. Appendix B contains a variety of materials that can support CRSE programmes. Appendix C lists a wide variety of organisations that have interests relevant to road safety programmes and associated websites. Appendix D briefly lists the 'lessons learnt' when conducting the case studies that interested practitioners should be aware of.

Further Information

These Guidelines and the case studies supporting them were conducted with the aid of a Knowledge and Research grant from the UK's Department for International Development (DFID).

For further information on these Guidelines or road safety education enquiries, please contact:

Road Safety Enquiries
TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham
Berkshire
RG40 3GA

Tel: +44 (0)1344 773131
Fax: +44 (0)1344 770356
Email: road_safety_enquiries@trl.co.uk

Interested readers should also visit the DFID transport website:

www.transport-links.org/transport_links/projects/kar_themes.asp

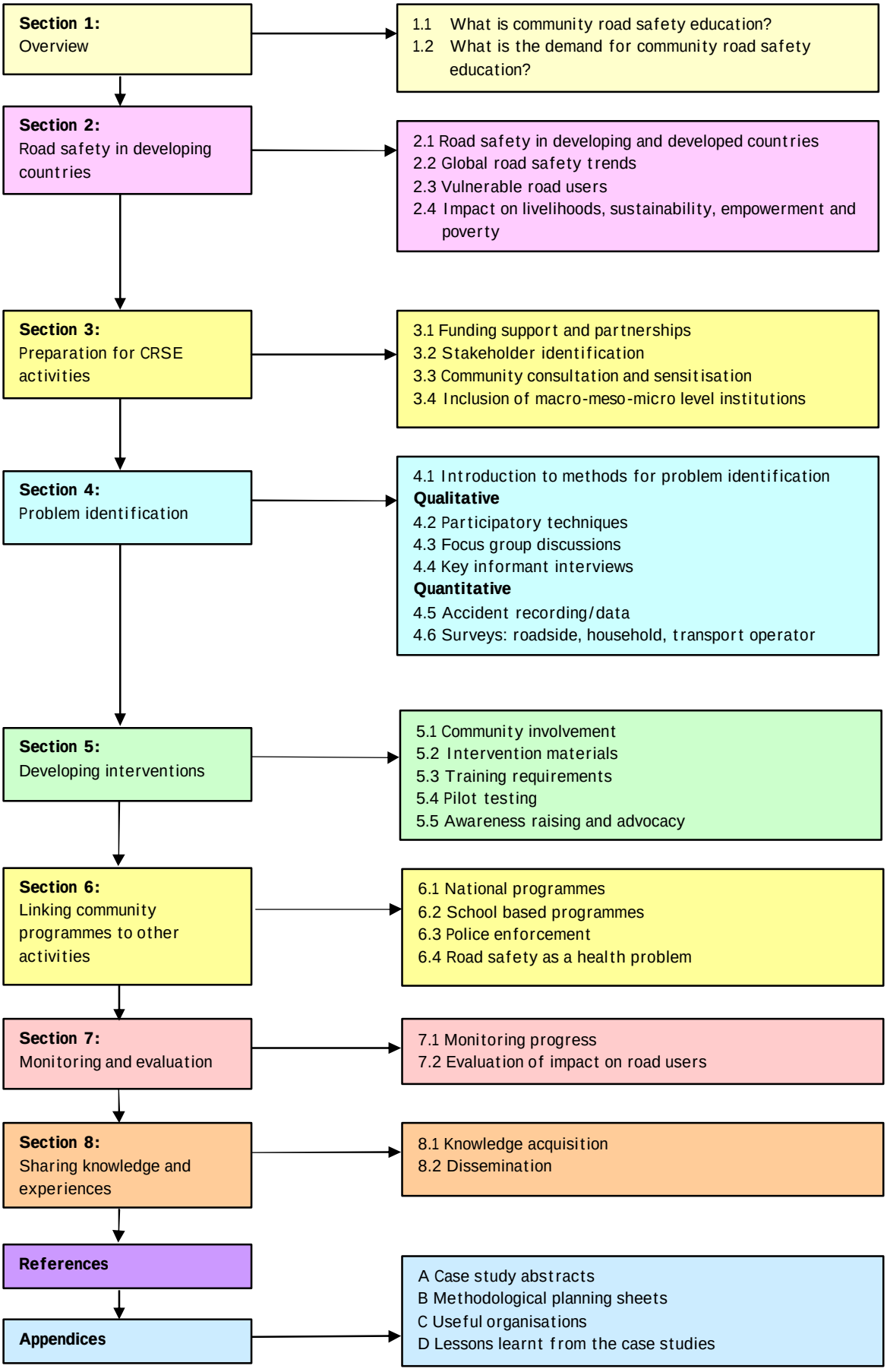
ACKNOWLEDGEMENTS

TRL and the main authors of these Guidelines, Allan Quimby and Annabel Davis, would like to acknowledge the following institutions and individuals who participated in the project by conducting case study projects to help with production of the Guidelines:

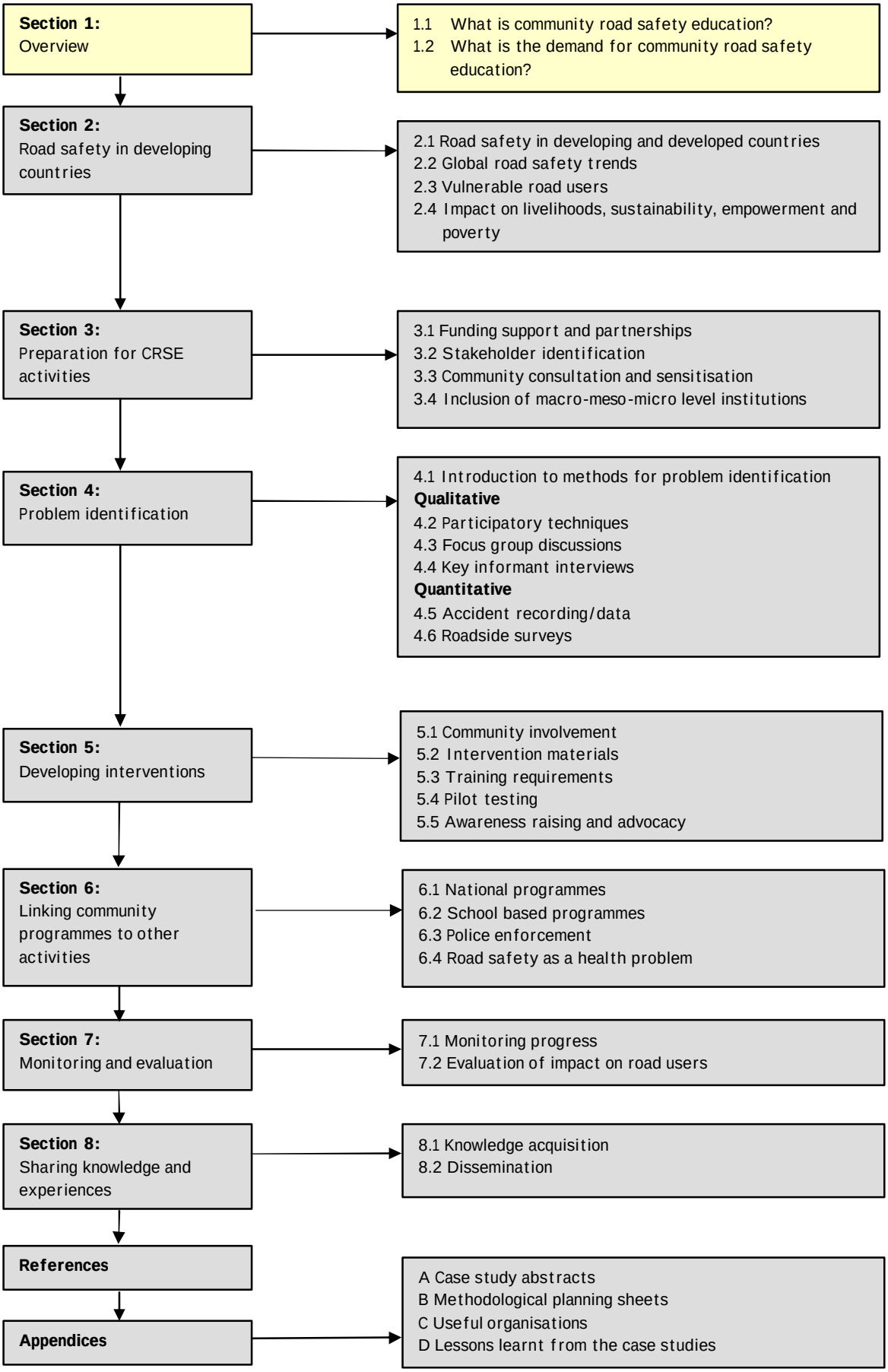
- Ahmed Najmul Hussain and Md Razaul Karim of the Bangladesh Rural Advancement Committee (BRAC) (Bangladesh).
- Rudith King, Jack Lewis and Justice Amegashie of the Global Road Safety Partnership (GRSP-Ghana)
- Rohit Baluja and Ananda Helecar of the Institute of Road Traffic Education (IRTE) (India)
- Lynn Vermaak of the Centre for Scientific and Industrial Research (CSIR) and Bongi Blamini of Mpumulanga Department of Local Authority (South Africa)

Country reports of these case studies and a literature review on community road safety education are available from the DFID Transport-Links website (see above).

Figure 1: Structure and contents of guidelines for conducting CRSE programmes



Section 1: Overview


Section 1:
Overview
1.1 What is community road safety education?
1.2 What is the demand for community road safety education?
Section 2:
Road safety in developing countries
2.1 Road safety in developing and developed countries
2.2 Global road safety trends
2.3 Vulnerable road users
2.4 Impact on livelihoods, sustainability, empowerment and poverty
Section 3:
Preparation for CRSE activities
3.1 Funding support and partnerships
3.2 Stakeholder identification
3.3 Community consultation and sensitisation
3.4 Inclusion of macro-meso-micro level institutions
Section 4:
Problem identification
4.1 Introduction to methods for problem identification
Qualitative
4.2 Participatory techniques
4.3 Focus group discussions
4.4 Key informant interviews
Quantitative
4.5 Accident recording/data
4.6 Roadside surveys
Section 5:
Developing interventions
5.1 Community involvement
5.2 Intervention materials
5.3 Training requirements
5.4 Pilot testing
5.5 Awareness raising and advocacy
Section 6:
Linking community programmes to other activities
6.1 National programmes
6.2 School based programmes
6.3 Police enforcement
6.4 Road safety as a health problem
Section 7:
Monitoring and evaluation
7.1 Monitoring progress
7.2 Evaluation of impact on road users
Section 8:
Sharing knowledge and experiences
8.1 Knowledge acquisition
8.2 Dissemination
References
Appendices
A Case study abstracts
B Methodological planning sheets
C Useful organisations
D Lessons learnt from the case studies

1.1: WHAT IS COMMUNITY ROAD SAFETY EDUCATION?

"A community road safety education programme is one that relies on community involvement and is not restricted to formal school education, comprising all demographic groups and accounting for illiteracy and other learning constraints."

What is a community?

A community can be many things. It can be defined as:

- ✓ An interacting population of various kinds of individuals in a common location
- ✓ A united body of individuals who share with each other
- ✓ A body of persons of common interests scattered through a larger society
- ✓ Groups with common ownership or participation.

Community programmes, which have proved to be successful in other areas (e.g. health education) are increasingly viewed as a viable way of promoting road safety in a targeted and sustainable way. There is no precise definition of community road safety, but its key characteristics are:

- Community road safety relies on the active involvement of the community
- Road safety initiatives are initiated at the local level – problems are identified by the community itself and not outsiders
- The community encompasses all demographic groups (young, elderly, economically active, unemployed, physically and visually impaired)
- Community road safety is not limited to formal school education
- Community road safety combines accident data analysis with behavioural change for a safer environment
- It can be viewed as a 'bottom-up' rather than 'top-down' approach

It is becoming increasingly recognised that road safety represents a major, and growing, health problem around the world (WHO, 1999), rather than 'simply' being a transportation issue. As a result these guidelines recognise that preventing road accident casualties needs to be tackled as a health problem (see section 6.4) and that the lessons learned by past and existing programmes could be adapted - or borrowed - to improve road safety (Cairney, 2000). In many countries sizeable health communication networks are already in place - the challenge is to have road safety adopted as part of this health programme and to use the health 'model' of communication and dissemination (see for example www.healthcomms.org) - or, if necessary, to set up new channels for educating road users about road safety.

However, road safety cannot be left for health practitioners alone to tackle. Transport Departments and Ministries (or in some cases National Road Safety Councils or Committees) need to recognise that safety is an important element of infrastructure

improvements such as road building and maintenance. It is reassuring to note that many road improvement/rehabilitation schemes supported by aid/donor organisations now require safety components to accompany the engineering elements.

Why community programmes?

Education and communication professionals have long recognised the need for a holistic education approach to influencing the behaviour of community members, especially the young. Formal school programmes in road safety and indeed in health generally provide the backbone to information programmes in that they set out the advice in a clear and simple format graded for the capabilities of different age groups. However children also learn from their own peer groups, parents and other role models in the community and, of course, some children never attend school at all. It is increasingly recognised that communities and families have considerable potential to influence the young and that such programmes need to be developed in support of the formal school programmes. It is also recognised that in some circumstances the young can be used to educate their parents (e.g. road crossing and use of seatbelts).

While formal road safety education in schools should be incorporated into the national school curriculum, there is considerable merit in promoting informal community-based education for adults and children to avoid neglecting those outside the school environment. These might include pre-school children, non-attendees and older school leavers who may not have received an adequate education, and who, in many developing countries, probably received little or no education about road safety.

Road safety education and publicity (along with engineering and police enforcement) are recognised as playing a major role in improving safety. While road safety education conducted in schools has a key part to play in improving road user behaviour, this fails to reach both children who do not attend school and older road users who have left (or never attended) school. The problem is how to educate/communicate with such people who because of poverty and gender issues, or the need to feed their families, often live outside formal centralised programmes. One effective way of providing suitable information to such individuals is via existing community organisation and programmes such as womens, village, religious or social and youth groups. Such networks have proved highly successful in other areas such as providing health advice (about hygiene, family planning, HIV/AIDS etc).

The 'Safe Communities' approach (Hoque, 2000; Cairney, 2000) has become increasingly popular in developed countries. This recognises the need to involve the community in both identifying and targeting safety problems, rather than expecting 'centralised' programmes to be either relevant or adopted by local stakeholders in an effective and sustainable way. These community safety programmes target a wide variety of safety problems (e.g. street crime, drug abuse and accidents in the home and while at work), and many of them recognise the need to include road safety as an important issue to be considered within the programmes.

Table 1.1 introduces the various stages that can be adopted in a CRSE programme, from inception to implementation and monitoring. It can be used as a simple checklist when planning a community road safety education strategy to ensure that all phases are properly covered.

Table 1.1: Stages of a CRSE programme

ANALYSIS PHASE

- What are the safety and mobility problems?
- Where do the accidents occur? To whom? At what time of day?
- Understand the problem in the town/city - safety, environmental and mobility
- Listen to everyone's complaints and make sure everyone has been involved

STRATEGY PHASE

- Given the high-level objective and identified problems; how do we go about fixing the problems to achieve the objective?
- Break the problems into sub-areas and produce a safety strategy for each
- Check these strategies with everyone - get commitment

PLANNING PHASE

- Plan to prioritise and tackle problems in order, usually starting with the biggest
- Use as many different approaches as possible to deal with the problems
- Check the consequences of the solutions proposed
- Have timetables that are reasonable, with some contingency
- Check these solutions with everyone to get support

DESIGN PHASE

- Design measures for the solutions proposed
- Make the designs acceptable to as many people as possible
- Check costs do not exceed finance limits
- Check resources are available to design and implement each measure proposed
- Check designs are supported by everyone

IMPLEMENTATION PHASE

- Implement measures in stages, try to arrange a success to start with
- An individual initiative might follow these stages:
  - Consultation
  - Detailed design
  - Implementation
  - Assessment

Note: the full benefits may not be realised until all the measures are in place

ASSESSMENT PHASE

- Measure attitudes, knowledge, accidents, casualties and flows etc. Check against objectives - where objectives are not achieved, reconsider and possibly introduce additional measures
- Make sure everybody knows about the successes and failures during the project with regular meetings, press releases and announcements
- Report back on the achievement of the objectives

FUTURE PLANNING PHASE

- Make sure all feedback is obtained
- Identify and implement any improvements
- Plan and implement a sustainable programme.

References

Cairney, P. (2000). Current status of community road safety in Australia and New Zealand. ARRB Report AP-R 214. Victoria: Australian Road Research Board

Exchange: a networking and learning programme on health communication
www.healthcomms.org

Hoque, M. M. (2000). On creating supportive environments for safe community. Proceedings of the 9th International Conference on Safe Communities. 26-28 February, 2000; Dhaka, Bangladesh

WHO (1999) World health report: making a difference. Geneva: World Health Organization

1.2: WHAT IS THE DEMAND FOR COMMUNITY ROAD SAFETY EDUCATION?

"Community based education provides the opportunity for developing advice that is much more appropriate to local conditions, much more frequent at high risk times, and more likely to be complied with, because of greater community ownership and the use of more influential role models."

This road safety initiative on community road safety education for developing countries was initially conceived recognising that:

- A recent World Health Organisation (WHO) report predicts that by 2020 road accidents will be the third major health problem in the world (Murray and Lopez, 1996); currently, around 1 million fatalities are caused by road accidents each year, the vast majority in developing countries (Jacobs et al, 2000)
- There are numerous examples of (top-down) imposed programmes failing; while many community participatory programmes have been found to be effective and sustainable
- In many developing countries road safety is not recognised as being an important problem (by either the public or politicians)
- Currently aid agencies and national (and regional) governments are giving a higher priority to a variety of health issues (such as contraception, HIV/AIDS, and other diseases) - and in many cases with a marked degree of success
- The UK's Department for International Development's (DFID) focus is on poverty reduction and improving livelihoods can be supported by helping vulnerable road users
- A reduction in road traffic accidents will help towards achieving the United Nation's primary Millennium Development Goal of eradicating extreme poverty (Goal 1)

In developing countries the child pedestrian crash problem is generally more serious than in developed countries (see Section 2.3); a problem typically exacerbated in areas which experience low school attendance figures. It is therefore important that education through community programmes is considered in addition to the school system, which itself is often inadequate (Downing and Sayer, 1982).

It is recognised that road safety education programmes should be graded and developmental (Downing, 1987; TRL, 1997) and that teachers need guidelines on what and how to teach. To meet these requirements, many countries have produced syllabus documents and teacher guides, including some for developing countries. However, it is in this area that the transferability of developed country solutions to

developing countries, and from one country to another, is less certain, and more research is needed in many developing countries.

However, it is also widely recognised that in developing countries much more than 'just' teaching children as part of their formal schooling is required and that there is also a need to consider all members of the community.

Community development for road safety is the process of identifying, and working with, and within, different communities of people to assist them with becoming aware of their own local road safety issues. Communities are supported in developing and implementing their own informed solutions to these issues, through planning and co-ordination, provision of accurate and relevant road safety information, and accessing funding.
The underpinning philosophy of CRSE programmes is that they:

- Encourage community ownership of both issue and solution, and thereby build confidence, capability and a positive, sustainable change in road safety attitudes and behaviour at the community level
- Provide the ability to involve particular communities that may be difficult to access by more conventional approaches
- Use human resources in the community to bring about change
- Enable the communities themselves to become agents of change
- Generate insights on local road safety issues and new ideas for road safety that can feed back into the overall road safety environment
- The whole community can be encouraged to support willing compliance with safety standards and rules

References

Downing, A. J. and Sayer, I. A. (1982). A preliminary study of children's road crossing knowledge in three developing countries. TRRL Supplementary Report 771. Crowthorne: Transport Research Laboratory

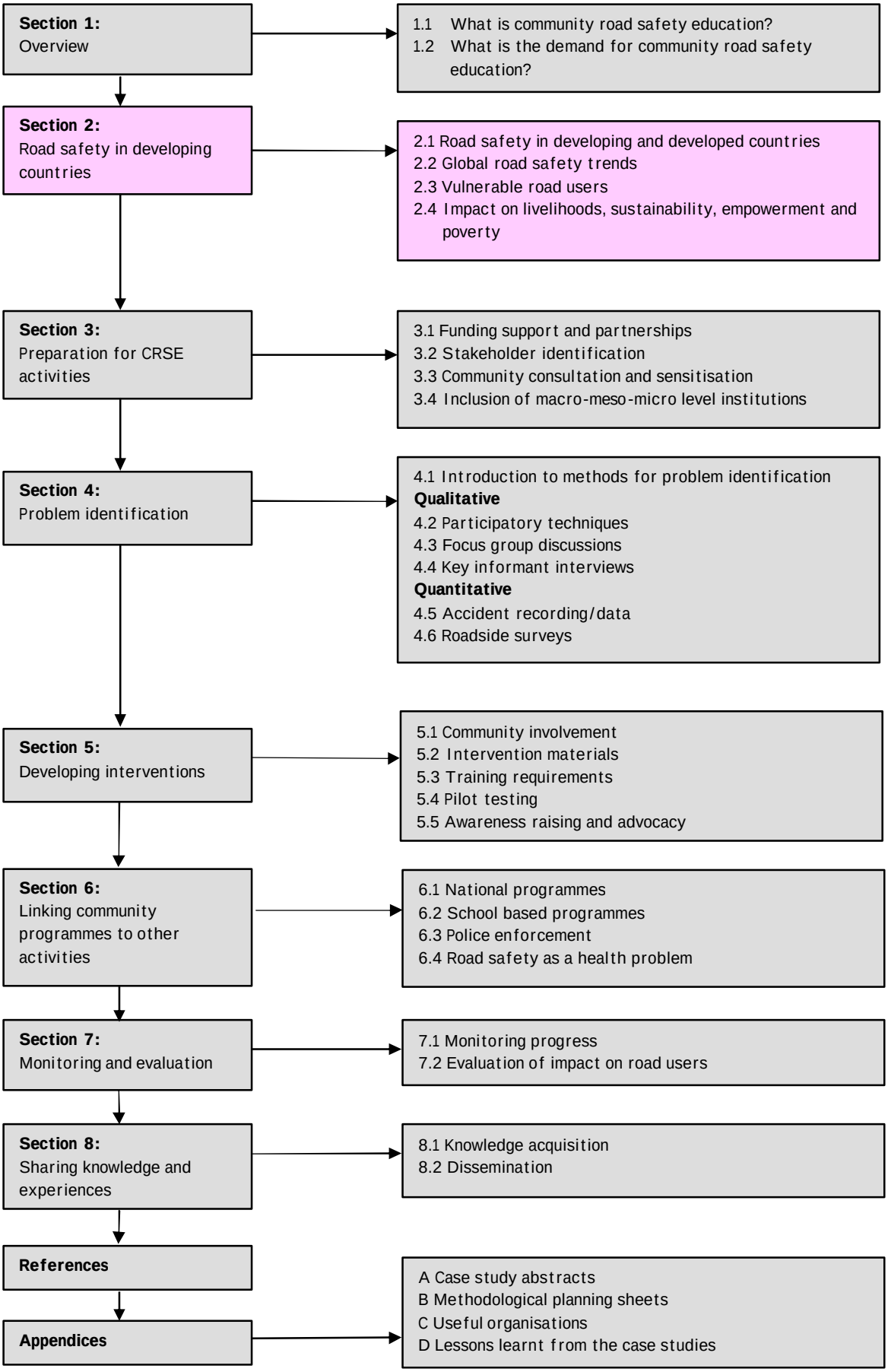
Downing, C. S. (1987). The education of children in road safety. Proceedings of the Synopsium, The Healthy community. Child Safety as Part of Health Promotion Activities. Stockholm

Jacobs, G. Aeron-Thomas, A. and Astrop, A. (2000). Estimating global road fatalities. TRL Report 445. Crowthorne: Transport Research Laboratory

Murray, C. and Lopez, A. (1996). The global burden of disease. World Health Organization/Harvard School of Public Health/World Bank

TRL (1997). Overseas road note 17: road safety education in developing countries – guidelines for good practice in primary schools. Crowthorne: Transport Research Laboratory

Section 2: Road Safety in Developing Countries


Section 1:
Overview
1.1 What is community road safety education?
1.2 What is the demand for community road safety education?
Section 2:
Road safety in developing countries
2.1 Road safety in developing and developed countries
2.2 Global road safety trends
2.3 Vulnerable road users
2.4 Impact on livelihoods, sustainability, empowerment and poverty
Section 3:
Preparation for CRSE activities
3.1 Funding support and partnerships
3.2 Stakeholder identification
3.3 Community consultation and sensitisation
3.4 Inclusion of macro-meso-micro level institutions
Section 4:
Problem identification
4.1 Introduction to methods for problem identification
Qualitative
4.2 Participatory techniques
4.3 Focus group discussions
4.4 Key informant interviews
Quantitative
4.5 Accident recording/data
4.6 Roadside surveys
Section 5:
Developing interventions
5.1 Community involvement
5.2 Intervention materials
5.3 Training requirements
5.4 Pilot testing
5.5 Awareness raising and advocacy
Section 6:
Linking community programmes to other activities
6.1 National programmes
6.2 School based programmes
6.3 Police enforcement
6.4 Road safety as a health problem
Section 7:
Monitoring and evaluation
7.1 Monitoring progress
7.2 Evaluation of impact on road users
Section 8:
Sharing knowledge and experiences
8.1 Knowledge acquisition
8.2 Dissemination
References
Appendices
A Case study abstracts
B Methodological planning sheets
C Useful organisations
D Lessons learnt from the case studies

2.1: ROAD SAFETY IN DEVELOPING AND DEVELOPED COUNTRIES

"The rate of road accidents in Africa is increasing at an alarming rate … it is approaching crisis proportions in our part of the world" (Adebayo Adedeiji, Executive Secretary, UN Commission for Africa)

Size of the road safety problem

An estimated 1.2 million people are killed around the world each year in road accidents (WHO, 2004; PIARC, 2004). For every person killed there are many more (perhaps 30 - 40 times the number) who are seriously injured. Some of these injuries cause permanent disabilities so that victims can no longer work, and some involve parents, or other wage earners, who can no longer support their families. Road accidents (or 'crashes') therefore represent a very major problem around the world; although one that does not seem to be given either the social or political attention it deserves. To put this in context, the number of people killed on the roads every day is equivalent to around nine full jumbo-jets crashing each day, or nearly one person dying every 3 seconds.

In fact, road accidents are now widely recognised as a serious world health problem, sometimes refered to as a global 'epidemic'. Importantly, it is a problem that is worsening year by year. While in 1990 the World Health Organization (WHO, 1999) calculated that road accidents were the ninth most important cause of 'years of life lost' around the world (a measure that reflects the age of the person suffering a premature death or disability), it forecasts that by the year 2020, road accidents will have moved up to second place – unless the growing problem is tackled.

In addition to the humanitarian argument (of reducing the human costs of pain, grief and suffering) for taking steps to reduce road deaths and injuries, a strong case can be made for reducing accidents solely on economic grounds, as they consume massive financial resources that already poor countries can ill afford to lose. Ghee et al (1997) have estimated that road accidents cost developing countries well in excess of US$65 billion each year (based on a typical cost of between 1 and 4 per cent of a country's gross national product) – more than the total aid they receive from all bilateral and multilateral sources. In addition, research indicates that road casualties threaten to take up about 25 per cent of all hospital beds in developing countries.

Globally, it is estimated that road accidents cost over US$500 billion each year, a figure based on estimates of the cost of accidents (e.g. using a 'willingness to pay' method) which can differ greatly for different countries (TRL, 1995) and are typically much higher in more developed countries. In a country such as the United Kingdom road accidents are estimated to 'cost' around £12 billion each year, and around £3 billion is spent on trying to reduce their number.

Comparing regions and countries

A number of studies have been conducted comparing the road accident risk in different countries (Jacobs et al, 2000). This is not a simple task because of the need to control for 'exposure' (that is to take account of the size of the population, the number of

registered vehicles or kilometres driven), different definitions of a road accident fatality (with the specified interval between the traffic accident and time of death varying between countries), but, more importantly, because of problems in many countries with how accidents are recorded. Under-reporting of accidents is known to be a particular problem in the developing world where, sometimes, between 25 and 60 per cent of accidents can go unrecorded (Aeron-Thomas, 2000). However, it is clear that road accidents are a major problem in developing countries and that they are increasing in number, especially when compared to more highly motorised countries.

Comparing different regions around the world is also problematic because there is no simple and globally accepted way of grouping countries. Reference is frequently made to developing vs. developed countries as well as other descriptions such as high vs. low income, highly motorised vs. low motorised, or even northern vs. southern regions or countries.

Jacobs et al (2000) estimate that about 70 per cent of the road fatalities occuring each year take place in those countries classified as low or middle income (see Table 2.1); with a further 18 per cent from the Middle Eastern, Central and Eastern European countries. Note, however, that the highly motorised countries (HMC) region will include countries on both sides of the Atlantic as well as in the southern hemisphere, and that North African countries are grouped with Middle-Eastern countries leaving Sub-Saharan Africa as a distinct region.

Table 2.1: Proportion of all road accident fatalities in different regions

Region	Proportion of all accidents (%)
Asia and Pacific	44
Latin/Central America & Caribbean	13
Middle East/North Africa	6
Highly motorised countries	14
Sub-Saharan Africa	11
Central/East Europe	12

Using a slightly different classification of the world's regions, Table 2.2 below (Jacobs et al, 2000) shows the percentage of all road deaths, the proportion of the world's registered vehicles and amount of population in the different regions. It shows that only around 14 per cent of global road deaths occur in the so-called developed regions of the world, even though they contain almost two-thirds of the worlds motor vehicles.

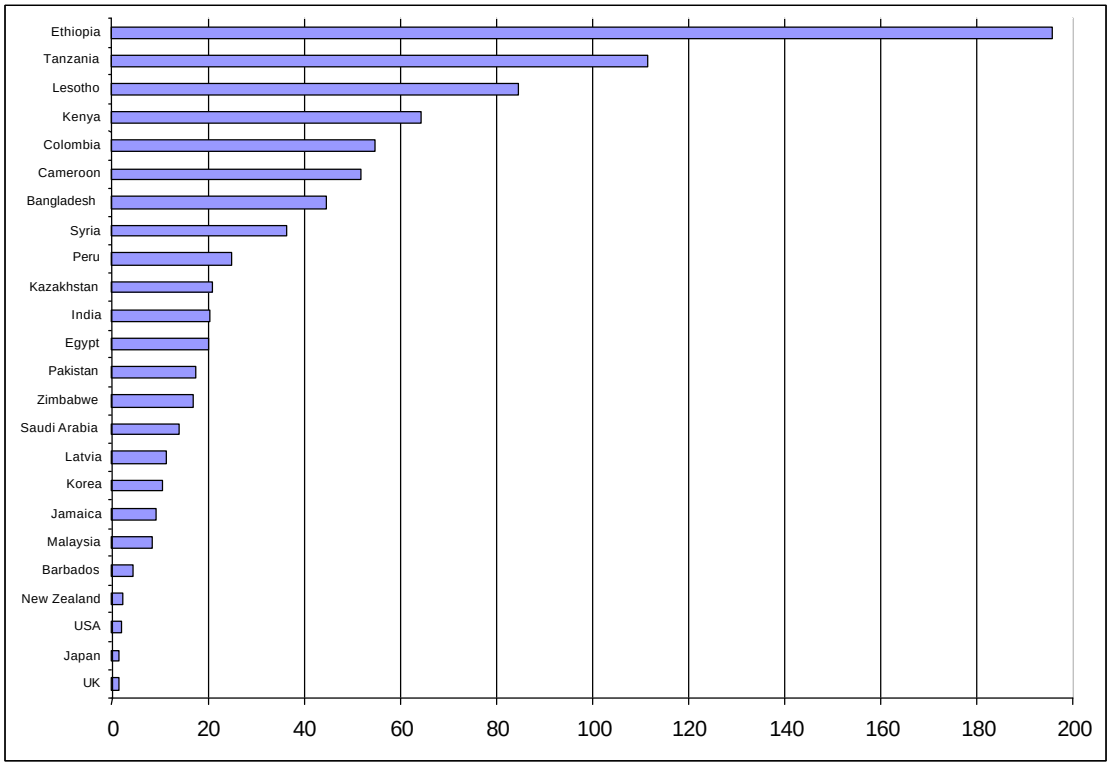
Table 2.2: Proportion of road deaths, vehicles and population in different regions

Region	Deaths	Vehicles	Population
Highly Motorised Countries (HMC)	14	60	15
Asia-Pacific	44	16	54
Central-Eastern Europe	12	6	7
Latin America	13	14	8
Africa (Sub-Sahara)	11	4	11
Middle East and North Africa	6	2	4

In addition to comparing regions it is possible to look at road risk in individual countries. There are a variety of ways of comparing the severity of the road accident problem. One of these is to compare the number of deaths from road accidents per annum per 10,000 licensed vehicles. However, this index takes no account of road user 'exposure' to risk (or kilometres driven or travelled) and in many developing and emerging countries information on accident numbers, and even the number of vehicles using the roads, may be faulty; also it takes no account of differences in the use of cycles and public transport in different countries.

Figure 2.3 illustrates the accident risk for a selection of countries. It shows that countries of Western Europe and North America are characterised by a death rate of often less than two per 10,000 licensed vehicles. However, some developing countries have death rates in excess of 150. In most developing and emerging countries, road accident deaths are under-reported and licensed vehicles are over-estimated because scrapped vehicles tend not to be removed from the vehicle register. Both of these factors acting together suggest that actual fatality rates might well be greater than those shown.

Figure 2.3: Fatalities/10,000 licensed motor vehicles in selected countries (1996)



Who is responsible for safety?

Although road safety is increasingly recognised as a sizeable and growing problem in many countries, it is often given a relatively low priority from central government. This is perhaps understandable given other pressing social and political problems, and a typical lack of funds. Maintaining and building roads is often considered more important than making them safe.

There are usually no government departments or agencies that are specifically given the responsibility for road safety; and where they are given responsibility, they are often provided with inadequate funding to do the job. While some governments have dedicated departments (within, for example, a Department of Transport or Communications, or Ministry of Works) some have constituted a National Road Safety Council (or Committee) to be responsible for road safety, while in some countries (e.g. South Africa) the responsibility has been passed down from central government to regional or provincial level.

A recent study (Aeron-Thomas et al, 2002) of how road safety is 'managed' in different countries, reviewed road safety management in five high-income countries, one Latin American country, three Asian countries, one Pacific and four African countries. It found that there were very marked differences, even in developed countries that typically had a better safety record than the developing countries examined. However, there appears to be no best practice for managing and co-ordinating road safety activities in a given country.

The process of planning and implementing road safety improvements needs to be multi-disciplinary and dynamic. Co-ordination between the various bodies involved in road safety activities, such as the engineers, police, and the health sector is essential. There will often be a need to strengthen the institutions responsible for the various aspects of road safety, and to increase their capability for multi-sectoral action.

The importance of involving civil society in reducing accidents has been recognized in recent years, for example, road administrations consulting with local road users directly to determine their particular safety concerns, and seeking their input into proposed improvements. A World Bank initiative called the Global Road Safety Partnership (GRSP) began in 1999 to support and promote strategic examples of partnerships for community development. GRSP currently has advisors to ten countries based in Africa, Asia, Eastern Europe and Latin America, and brings together government, businesses and civil society to improve road safety, and ensure that implementation is financially and institutionally sustainable.

References

Aeron-Thomas, A. Downing, A. J. Jacobs, G. D. Fletcher, J. P. Selby, T. Silcock, D. T. (2002). Review of road safety management practice. TRL Project Report, PR/INT/216/2002. Crowthorne: TRL Limited

Aeron-Thomas, A. (2000), Under-reporting of road traffic casualties in low income countries. TRL Project report, POR/INT/199/00. Crowthorne: TRL Limited

Ghee, C. Silcock, D. Astrop, A. and Jacobs, G. (1997). Socio-economic aspects of road accidents in developing countries. TRL Report 247. Crowthorne: Transport Research Laboratory

Jacobs, G. D. Aeron-Thomas, A. and Astrop, A. (2000). Estimating global road fatalities. TRL Report 445. Crowthorne: TRL Limited

PIARC (2004). Road safety manual. PIARC: World Road Congress (to be published)

TRL (1995) Overseas road note 10: costing road accidents in developing countries. Crowthorne: Transport Research Laboratory

WHO (1999) World health report: making a difference. Geneva: World Health Organization

WHO (2004). World report on road traffic injury prevention. Geneva: World Health Organization

2.2: GLOBAL ROAD SAFETY TRENDS

"The World Health Organization (WHO) estimate that by the year 2020 road accidents will be the second highest cause of 'years of life lost (YLL)' each year around the world" (WHO, 1999)

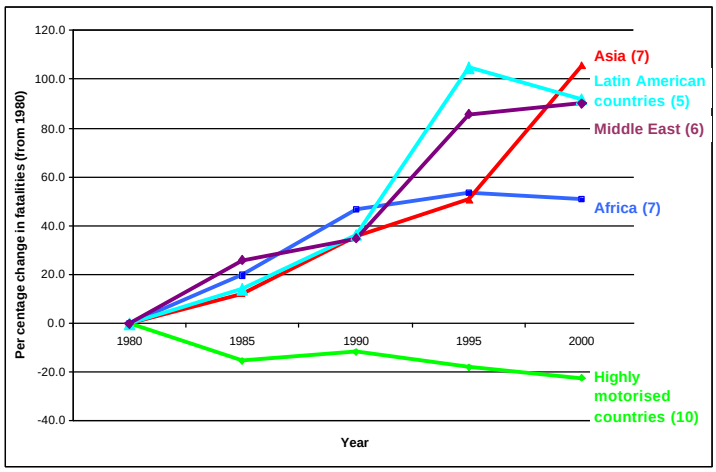
Is road safety improving around the world?

The first recorded road accident death (to a pedestrian) occurred in London 1896; the coroner commented that such an event should never be allowed to happen again. Since then around 30 million lives have been lost to road accidents and many more millions of people have been injured and crippled.

Unfortunately in many regions of the world – and in a majority of individual countries – the road safety problem is becoming an increasing problem. While in Europe and North America the road accident situation is generally improving, many developing and emerging countries face a worsening situation. Whereas high-income countries have had over half a century to learn to cope with the problems of ever-increasing motorisation, the less wealthy nations have had less time and, for many, the pace of change has been much greater.

Figure 2.4 shows the percentage increase or decrease in the actual number of road accident fatalities over the period 1980 to 1995 for five groups of countries (PIARC/ DFID/GRSP, undated). During this period, the number of road accident deaths in 14 developed countries (DC) actually fell on average by about 20 per cent. Conversely, in the sample of Asian, Latin American (LAC), African and Middle Eastern countries (ME), for which reasonably accurate statistics were available, there were increases ranging from 25 to over 71 per cent.

Figure 2.4: Regional trends in road deaths 1980-2000



There are numerous factors that bring about change in a countries road safety record. As a country develops economically it moves more goods and people on its roads, and as people become wealthier they buy more motor vehicles. The movement of people from rural to urban areas is also likely to influence the numbers of people involved in

accidents, both in the cities and when people travel back to their villages, often by public transport, to see their friends and families.

While it is true for most countries that car and/or motorcycle ownership is steadily increasing this is not being fully reflected in accident trends in either developed or developing countries.

Figure 2.5 shows the variation in number of road accident fatalities, registered motor vehicles and population size between 1986 and 1996, in a small sample of highly motorised (developed) and less motorised (developing) countries (Jacobs et al, 2000). While in developing countries the accident fatality rate increased by 40 per cent (with the number of vehicles increasing by over 130 per cent), in developed counties the numbers of accidents actually reduced by 9 per cent, although the number of vehicles increased by only 21 per cent.

Figure 2.5: Changes in accident fatalities, motorisation and population (after Jacobs et al, 2000)

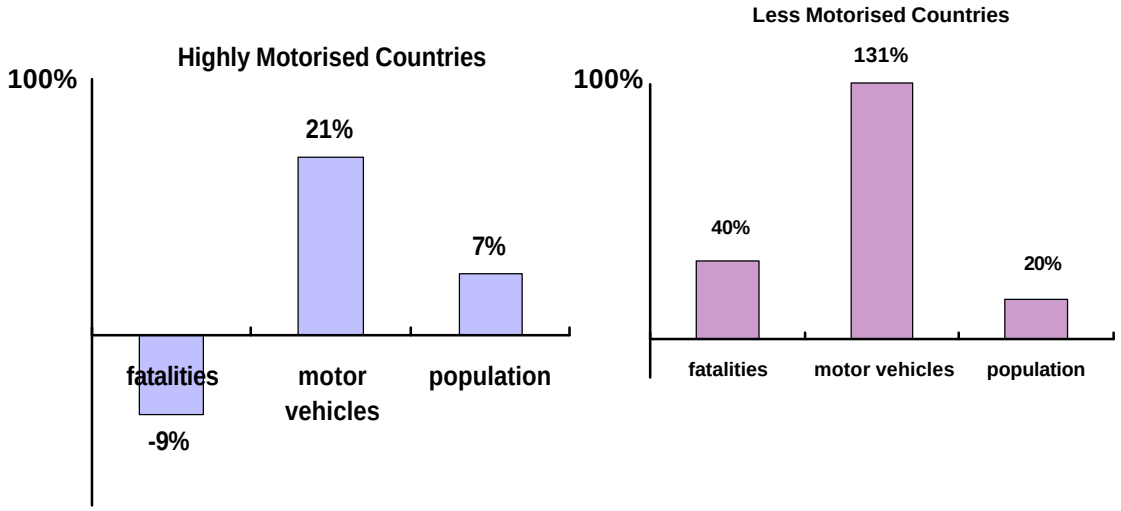


Figure 2.5 also shows that the population of developing countries had increased by around three times that of developed countries – a situation that should put increasing pressure on developing countries to improve their accident situation. In the short term it may only be possible to slow the increase in accident numbers, rather than being able to reverse the upward trend.

To provide more detailed information on how things have been changing over the last few years Figures 2.6 to 2.10 show changes in six East African countries for fatalities per 10,000 vehicles, fatalities per 100,000 population, number of vehicles per 1,000 population, number of fatalities, and increase in the number of registered vehicles – the last starting from a baseline in 1992 (Jacobs and Aeron-Thomas, 2000). This type of pattern is found in many developing countries and highlights the increasing problem that appears to be accelerating out of control in certain countries.

Figure 2.6: Fatalities per 10,000 vehicles

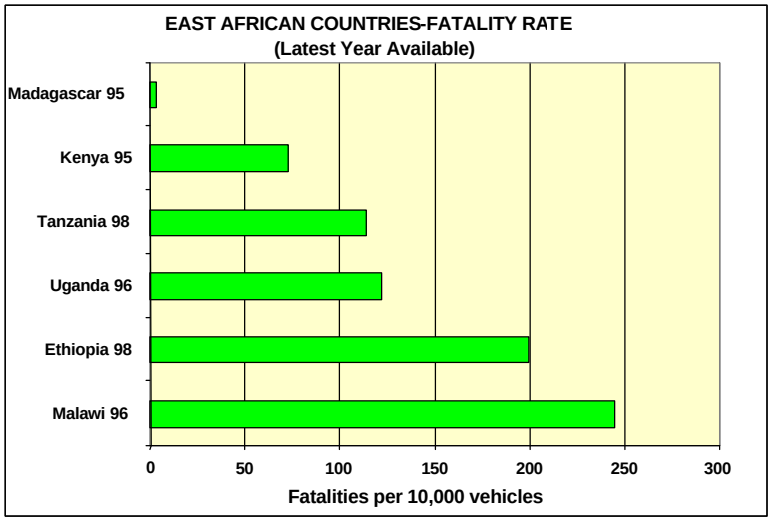


Figure 2.7: Fatalities per 100,000 population

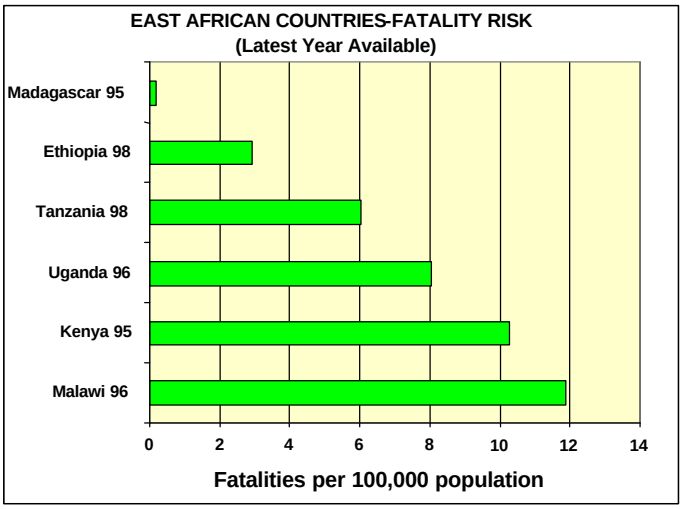


Figure 2.8: Vehicles per 1,000 population

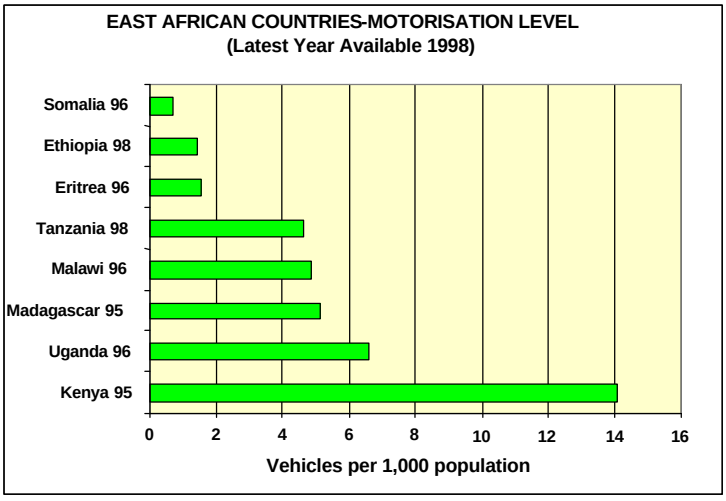


Figure 2.9: Number of fatalities 1985-1998

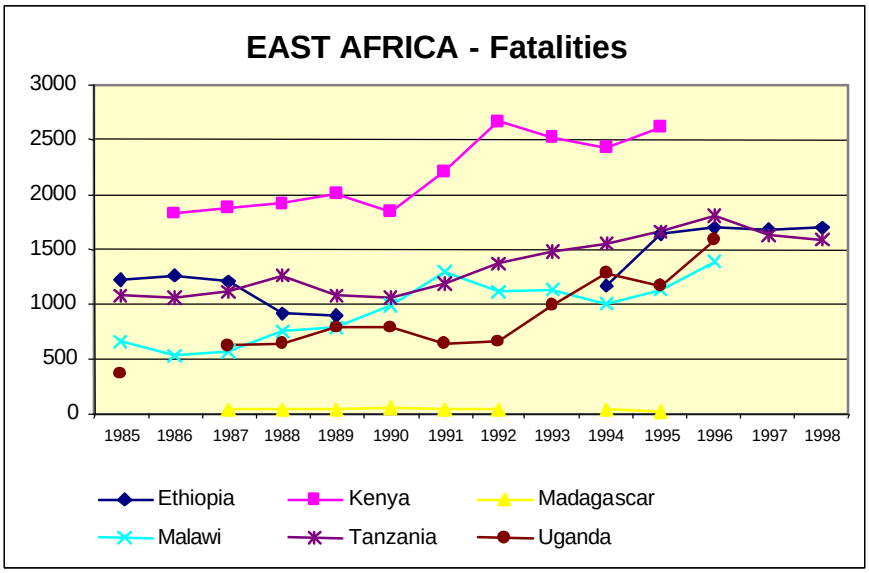
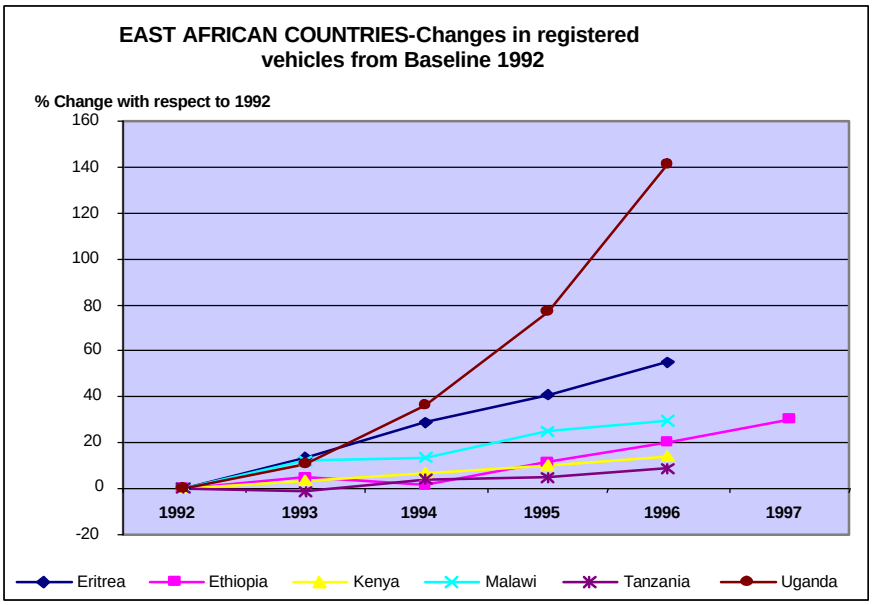


Figure 2.10: Number of registered vehicles 1992-1997



References

Jacobs, G.D. and Aeron-Thomas, A. (2000). African road safety review final report. Publication No. FHWA-SA-01-008, US Department of Transportation/Federal Highway Administration

Jacobs, G. D. Aeron-Thomas, A. and Astrop, A. (2000). Estimating global road fatalities. TRL Report 445. Crowthorne: TRL Limited

WHO (1999) World health report: making a difference. Geneva: World Health Organization

2.3: VULNERABLE ROAD USERS

"Road safety is an issue of immense human proportions; it is an issue of economic proportions; it's an issue of social proportions and it's also an issue of equity. Road safety very much affects poor people" (James D Wolfensohn, President – World Bank, 1999)

What people are involved?

The types of road accidents and the people involved vary considerably in different regions and countries. There are many reasons for this. For example, there may be differences in vehicle construction and maintenance quality, road condition, traffic law enforcement and police presence, and road user behaviour. Driver and pedestrian behaviour is influenced by their training and education, and their appreciation and awareness of road safety issues.

Although a considerable amount of information is known about road user behaviour, road accidents, and who is involved or injured in different countries, it should be recognised that there are considerable differences in how accident data is collected and, for example, how the police report 'contributory' factors. Although it is possible to talk about regional or national differences, in any single country there will be wide variations in accident type, for example urban and rural accidents, single victim accidents (such as a car hitting a pedestrian) and accidents involving multiple fatalities.

However, there is sufficient evidence to show that the types of accident taking place and the victims of these accidents vary substantially between developing and developed countries (WS Atkins, 1998; Downing et al, 2000; PIARC/DFID/GRSP, undated); so that any countermeasures being planned need to take account of these differences.

Types of accident

Some characteristics of accidents in developing and emerging countries that typically differ from those found in industrialised countries are:

- There are a relatively high proportion of fatalities to pedestrians and other vulnerable road users (such as cyclists). In many Asian, African and Middle Eastern countries between 40 and 50 per cent of people killed are pedestrians. Figure 2.11 shows the proportion of fatalities who are pedestrians in a small number of countries in each of the different regions of the world.

- More children (typically defined as being under the age of 16 years) are killed. In developing countries around 20 per cent of all accident fatalities are children; about twice the proportion found in more developed countries – see Table 2.12.

- More accident fatalities involve trucks, buses and other public service vehicles. It is common for public transport vehicles to be involved in 20 to 40 per cent of all accidents in developing countries. Table 2.12 also shows the proportion of fatalities involving truck and bus accidents for the same sample of 6 less developed countries, compared to the situation in the UK.

Figure 2.11: Pedestrian fatalities as percentage of all fatalities

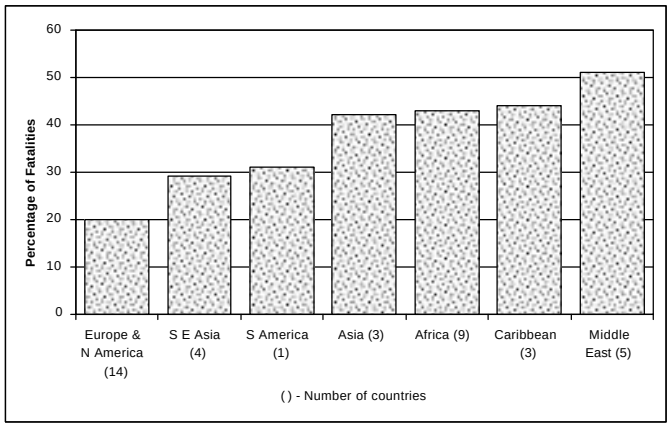


Table 2.12: Characteristics of fatal accidents

	Percentage of fatalities involving:	
	Children under 16 years	*Trucks and buses*
Botswana	16	25
Egypt	12	37
Ghana	28	50
Pakistan (Karachi)	14	44
Guinea	20	37
Zimbabwe	11	45
United Kingdom	9	21

Many of these statistics can be partly explained by differences in the demographics of the population and make-up of the traffic. For example, the average percentage of the population aged 5 to 14 years in a sample of 16 developing countries was 28 per cent compared with 15 per cent for nine industrialised countries (Downing and Sayer, 1982). While the proportion of pedestrians (who walk to work or school), cyclists, motorcyclist and those who use public transport tends to be higher in developing countries.

Many children who have been injured as pedestrians require long-term medical treatment and care. This can be a considerable economic burden for the injured child's family. Young pedestrian casualties generally come from the poorer sectors of the community (Christie, 1995, 1996; Ghee et al, 1997). In these sectors, the loss to the family is twofold: firstly the cost of caring for the injured child and secondly the loss of the income that the child earns or will earn. This loss of income means that the injury or death of a child can bring a poor family lasting financial hardship as well as personal grief.

It is also clear that there are very marked differences in road and traffic conditions and the behaviour of road users in different countries (Jacobs et al, 1981). In any case, since pedestrians, children and professional drivers constitute such a large proportion of the accident problem, it is clear that in many developing and emerging countries some degree of priority for improving safety should be given to these particular groups.

References

Christie, N. (1995). Social, economic and environmental factors in child pedestrian injuries: a literature review. Project Report 116. Crowthorne: Transport Research Laboratory

Christie, N. (1996). The high risk pedestrian: socio-economic and environmental factors in their accidents. Project Report 117. Crowthorne: Transport Research Laboratory

Downing, A. J. and Sayer, I. A. (1982). A preliminary study of children's road crossing knowledge in three developing countries. TRRL Supplementary Report 771. Crowthorne: Transport Research Laboratory

Downing, A. Jacobs, G. Aeron-Thomas, A. Sharples, J. Silcock, D. van Lottum, C. Walker, R. and Ross, A. (2000). Review of road safety in urban areas. PR/INT/200/00. Crowthorne: TRL Limited

Ghee, C. Silcock, D. Astrop, A. and Jacobs, G. (1997). Socio-economic aspects of road accidents in developing countries. TRL Report 247. Crowthorne: Transport Research Laboratory

Jacobs, G. D. Downing, A. J. and Sayer, I. A. (1981). A preliminary study of road user behaviour in developing countries. Supplementary Report 646, Crowthorne: Transport and Road Research Laboratory

PIARC (undated). Keep death off your roads.
www.grsproadsafety.org/activities/reports/5/74.pdf

WSAtkins/TRL (1998). Pedestrian accidents vulnerability in developing countries. WS Atkins/TRL Report R6236

2.4: IMPACT ON LIVELIHOODS, EMPOWERMENT AND POVERTY

"Road crashes are a worsening global disaster destroying lives and livelihoods, hampering development and leaving millions in greater vulnerability"
(International Federation of Red Cross and Red Crescent Societies, 1998)

The severity of road traffic accident impact

The rates of casualties from road traffic accidents are particularly high in low and middle-income cities with rates typically being over twenty deaths per 100,000 people per year, or around 500,000 per annum in total (Barter, 1999; Jacobs et al, 1999). The numbers of deaths from traffic accidents are much higher in developing countries (Ross and Mwiraria, 1992). In India, for example, roadway death rates are 18 times higher than those in Japan, amounting to 60,000 fatalities per year (World Bank, 1994). Critically for livelihoods, traffic accident deaths are a leading cause of death among people in economically active age groups (Ross and Mwiraria, 1992).

The impact of RTA's on the poor

Traffic accidents can have devastating impacts on the livelihoods of poor households, not least because the 'victim' of the accident will, in most cases be economically active, and contributing to the household income. Hence, there are substantial financial costs associated with road traffic accident victims including medical bills, loss of income (both by the incapacitated or deceased victim, and other household members who have to care for the injured – while often, children will also be taken out of school to fulfil this duty). Clearly, the cumulative effect of accidents has most impact on poor people's livelihoods, and on their ability to voice concerns about accident risks, as well as contributing to an unsustainable cycle of poverty. Hence, the following issues should be considered in any community road safety education programme:

- Poverty reduction
- Empowerment of vulnerable people
- Sustainability of livelihoods

Poverty reduction

The urban poor are particularly vulnerable to traffic accidents and a high percentage of victims come from the poorer sectors of society (Jacobs et al, 1999). This is partly explained by modal choice exposure of the poor and also their lack of awareness of safety issues. Pedestrians, users of public transport and non-motorised road users are often victims and the poor are disproportionately represented in this group of road users. Poor children are particularly vulnerable to traffic danger (Ghee et al, 1997). Not only is the street likely to be a play area for them, but they are unlikely to have received much road safety education. Those children who work as street vendors are particularly exposed due to the hazardous nature of their work e.g. darting between cars (Barter, 1999).

Relatively little work has been undertaken to determine the impact of road accidents on the poorest people in society. It is known that there is a clear link between an injured person's likelihood of surviving a serious accident and the level of medical facilities available. The poor are also made more vulnerable by their limited access to these facilities due to user charges. The cost to a household due to injury or death of one of the household members, 'productive' or 'non-productive' is unknown. It is, however, likely to be a considerable internal shock which would impact negatively on the livelihood of a poor household. Furthermore, the overall cost of road accidents to developing countries is around US$50 billion per annum (Jacobs et al, 1999).[1] Table 2.13 shows the number of working years lost per fatality due to road traffic accidents in a selection of countries. These are figures that represent a high proportion of total life expectancy.

Table 2.13: Number of working years lost per fatality in selected countries

	Argentina 1990	Costa Rica 1989	Mexico 1991	Mauritius 1992	Puerto Rico 1991	Trinidad & Tobago 1991
Number of working years lost	23.5	25.9	28.9	22.2	24.9	25.7

Source: Ghee et al (1997)

Empowerment of vulnerable people

The poor are particularly vulnerable to accidents since they are restricted to walking or using public transport to meet their travel needs. It is these modes that are the most vulnerable to traffic accidents. Studies show that most accidents are due to:

- Poor road use by pedestrians
- Poor driver behaviour
- Various external factors, e.g. road design and maintenance, poorly maintained vehicles, etc

There is considerable potential for improving the safety of these modes and reducing the risk to the poor, for example through education campaigns. The World Development Report (1994) suggests that a multi-pronged approach to road safety can reduce crashes at a reasonable cost:

> "Public investment in improved road infrastructure and highway operation systems, remedial action at known 'black spots' with high accident rates, and expanded public transport systems all make a difference. Legislation, financial incentives, and programmes of road safety education can improve driver behaviour, reduce traffic speeds, promote use of seat belts, improve vehicle safety, and reduce drunk driving. The insurance and legal liability systems may also offer powerful incentives for road safety".

[1] The cost to the economy is worked out by the number of year multiplied by the wage rate plus a) an estimate of the lost output (from the accident victim); b) the cost of medical treatment; c) damage to vehicles and other property; and d) administrative and police costs. The corresponding figure presented in Section 2.1 is based on accidents costing a proportion of Gross Domestic Product (GDP).

Sustainability of livelihoods

Sustainable livelihoods approaches provide a framework for linking transport to social impacts and the Millennium Development Goals. One of the biggest challenges of adopting this approach to policy reform is developing effective channels of communication to the central policy network, and empowering vulnerable people to lobby for improvements in road safety provision, in order to optimise their life chances.

Promoting dialogue and participation in policy-making by the poor requires:

- High quality participatory approaches which promote investigation by poor people into their priorities, needs and issues
- Support for the communication process
- Institutions able to respond to the interests and needs defined by poor people
- Capacity building of the community/civil society groups to negotiate with relevant local authorities

However, some road safety projects have experienced difficulties in achieving sustainable improvements and attention needs to be paid to the following:

- Establishing awareness of the problem
- Ensuring commitment to and ownership of the improvements
- Sufficient institutional strengthening
- Monitoring and evaluation with feedback and modification to action plans
- Sharing of project information for the benefit of all future projects

An important principle of Sustainable Livelihoods is the notion that (poor) people use a variety of strategies to improve their position in life. To construct a link between sustainable livelihoods and transport, one needs to appreciate how transport activities interlock with these strategies and the opportunities that offer long term structural improvements to society.

In the sustainable livelihoods framework, any community, regardless of the level of poverty, will have five categories of livelihood assets at varying levels of endowment. They are natural capital, social capital, human capital, physical capital and financial capital. The integrity of a development intervention depends on how it strengthens existing assets. Transport is more obviously a physical asset. It is also an essential link in the utilisation and/or accumulation of other assets. Evidently, use of natural resources, human capital building services (e.g. health and basic education) participation in social networks and political processes are all strongly correlated to ease or difficulty in physical access. Transport can also help create opportunities for increasing financial capital through greater market access and employment (Bryceson et al, 2003).

In the case of public transport there is likely to be a trade-off between improved safety and the cost of the service to the poor. For example, with limited financial

resources, vehicle maintenance procedures are usually inadequate and key safety features such as the condition of lights, tyres and brakes are likely to be defective in one way or another (see Jacobs and Downing, 1982). Improved safety incurs a cost which, unless subsidised by government, will have to be covered by higher user charges. Therefore, livelihoods would be improved by the reduction in the likelihood of a severe internal shock, yet there will be a greater drain on 'everyday' financial resources, and some may be unable to afford public transport at all.

Given the limited resources of developing countries and the consequently difficult decisions that have to be taken regarding resource allocation, it is important to develop a method by which the cost of road accidents and the value of preventing them can be assessed. It is therefore necessary to make the best use of any investment and to ensure that the most appropriate safety improvements are introduced in terms of the benefits which they will generate relative to the costs of implementation. It is also important to associate specific costs with road accidents and standardise the evaluation of projects that assess road safety. This will guarantee a more optimal pattern of expenditure on road safety and the inclusion of low-income members of society in the planning process.

One of the objectives of promoting a successful community programme will be to enhance and improve the livelihoods of both those involved in the programme and also others within the community – such that any programme should be as inclusive as possible.

It is clear that poor communities and individuals place a high priority on accessibility to services and opportunities. It is also clear that many of these services (health, education, etc) need the input of an efficient transport system to meet their own goals and targets. Clearly, to avoid the 'recycle' of poverty, and to minimise the risk of losing valuable capital assets (including good health and ability to work), road safety interventions should account for the livelihood needs of the poor. Any community road safety education programme should therefore provide an enabling environment that promotes empowerment of poor households residing in dangerous informal settlements by the roadside, so that they can both inform those at risk about safety and encourage them to lobby for a safer neighbourhood.

References

Barter, P. A. (1999). Transport and urban poverty in Asia: a brief introduction to the key issues. Regional development dialogue/United Nations Centre for Regional Development, 20, no.1: 143-63

Bryceson, D. Maunder, D. A. C. Mbara, T. C. Kibombo, R. Davis, A. S. C. Howe, J. D. G. F. (2003). Sustainable livelihoods, mobility and access needs. TRL Report TRL 544. Crowthorne: TRL Limited

Ghee, C. Silcock, D. Astrop, A. and Jacobs, G. D. (1997). Socio-economic aspects of road accidents in developing countries. TRL Report 247. Crowthorne: Transport Research Laboratory

International Federation of Red Cross and Red Crescent Societies (1998). World disasters report 1998. Oxford University Press

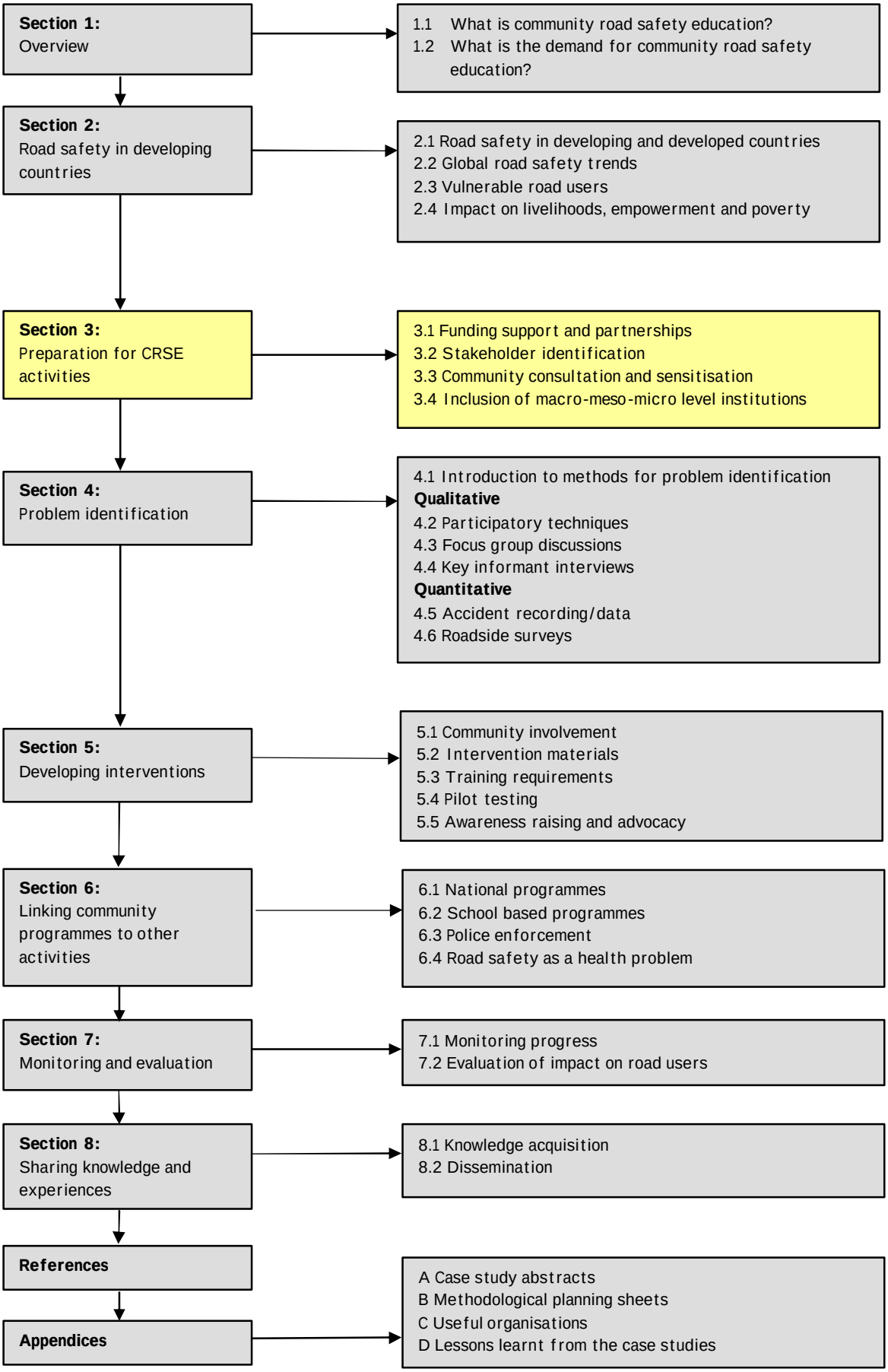
Jacobs, G. and Downing, A. (1982). A study of bus safety in Delhi. TRL Report SR758. Crowthorne: Transport Research Laboratory

Jacobs, G. D. Maunder, D. A. C. Astrop, A. Sayer, I. A. and Downing, A. J. (1999). Transport safety for the urban poor. Unpublished Report PR/INT/154. Crowthorne: TRL Limited

Ross, A. and Mwiraria, N. (1992). Review of World Bank experience in road safety. World Bank Technical Paper. Washington, D. C.: World Bank

World Bank (1994). World development report: infrastructure for development. Washington, D. C.: World Bank

Section 3: Preparation for CRSE Activities


Section 1:
Overview
1.1 What is community road safety education?
1.2 What is the demand for community road safety education?
Section 2:
Road safety in developing countries
2.1 Road safety in developing and developed countries
2.2 Global road safety trends
2.3 Vulnerable road users
2.4 Impact on livelihoods, empowerment and poverty
Section 3:
Preparation for CRSE activities
3.1 Funding support and partnerships
3.2 Stakeholder identification
3.3 Community consultation and sensitisation
3.4 Inclusion of macro-meso-micro level institutions
Section 4:
Problem identification
4.1 Introduction to methods for problem identification
Qualitative
4.2 Participatory techniques
4.3 Focus group discussions
4.4 Key informant interviews
Quantitative
4.5 Accident recording/data
4.6 Roadside surveys
Section 5:
Developing interventions
5.1 Community involvement
5.2 Intervention materials
5.3 Training requirements
5.4 Pilot testing
5.5 Awareness raising and advocacy
Section 6:
Linking community programmes to other activities
6.1 National programmes
6.2 School based programmes
6.3 Police enforcement
6.4 Road safety as a health problem
Section 7:
Monitoring and evaluation
7.1 Monitoring progress
7.2 Evaluation of impact on road users
Section 8:
Sharing knowledge and experiences
8.1 Knowledge acquisition
8.2 Dissemination
References
Appendices
A Case study abstracts
B Methodological planning sheets
C Useful organisations
D Lessons learnt from the case studies

3.1: FUNDING SUPPORT AND PARTNERSHIPS

"Responsibility for funding decisions should be devolved to the closest possible point to the community" (LTSA, 2003)

Why are funding partnerships required?

Community road safety interventions require participation and support at many different levels, especially when they are initially conceived, and starting up. While some of this support can be provided by staff already working in the area of road safety, and paid a salary to do so, to be successful and sustainable many other people need to be involved and some of these may expect, or need financial support. Even if they donate their time for free to support their community there may be other expenses involved with respect to producing materials and travel costs.

While the emphasis of community road safety education (CRSE) programmes is on low-cost interventions with the community itself providing many of the resources (e.g. time and commitment) some external support will invariably be required. It is judged that at the start CRSE will require the support and approval of local governments, National Road Safety Councils or active NGOs. This is because other funding agencies (whether institutional or governmental) often need convincing that what they are being asked to support will work; and they may also lack the experience in supporting bottom-up community activities which may lack sound financial management and auditing practices. This means that initially local government has a key role to play. Once programmes have been shown to be effective there is considerable scope to broaden the source of support by approaching national governments, international agencies and trying for sponsorship by interested businesses.

In general road safety is funded from numerous sources. A number of national ministries will normally be involved – other than the agency responsible for transport (e.g. those involved with funding the police, hospitals and industry) and all will recognise that an efficient (and safe) transport system is a vital national resource and one that needs to be properly supported and financed.

Public sector funding for road safety can be derived from alternative sources to general government revenues. These sources include:

- Levy on insurance
- Administrative costs
- Road funds
- Private sector (business) sponsorship

Specific recommendations for funding include (Wetteland and Lundebye, 1997):

- The public road sector agency should cover infrastructure costs and specific services
- Road users should pay for costs associated with reducing crash risks (e.g. driver training/testing and publicity campaigns)
- Road user tariffs could be used to improve hazardous locations
- Levies on insurance premiums could be used to finance co-ordination, awareness campaigns, education, enforcement equipment and research

In recent years a number of developing countries have financed certain elements of road safety as part of road building/rehabilitation loans from the development banks (e.g. World Bank, Asian Development Bank, African Development Bank). These have often involved conducting education programmes along the routes of upgraded roads as the increased vehicle speeds generally result in more accidents. This is one possible source of funding that will be carried out through the 'borrowing' government.

Also, the relatively recently established Global Road Safety Partnership (GRSP) that is supported by organisations such as the World Bank, DFID, and International Federation of Red Cross and Red Crescent Societies, is promoting road safety in developing or transitional countries through public-private partnerships. Their role as facilitators is often required because institutions are typically suspicious of people asking for money and prefer to work through an organisation with a proven track record for producing results. This said most aid organisations will provide limited support, encouragement and know-how for 'free' and nowadays a wealth of information is freely available on web-sites.

In a number of developing countries, non-governmental organisations (NGOs) are also becoming involved in promoting road safety (e.g. Bangladesh Rural Advancement Committee (BRAC), Institute of Road Traffic Education (IRTE), GRSP-Ghana, Uganda Road Accident Reduction Network Organization (URRENO)) and will be in a position to advise, support or conduct community road safety programmes.

However, any effective and sustainable community programme is likely to need some institutional and financial support in addition to the energy and motivation of the key 'drivers' of the programme. This financial support is likely to be provided by local government, national governments (perhaps via a local Member of Parliament), businesses (especially if they are local, and employers of community members, or can obtain some national exposure of their community focussed activities) or aid/support agencies – although these, as mentioned earlier, may prefer to work through an organisation with a proven track record. Of course, support can come from more than one direction; and the more the better.

Managing community road safety funding wisely

As funding for road safety programmes is sourced widely, it is highly desirable that responsibility for funds be given to an accountable agency within the government. This agency should place a high priority on managing its responsibilities wisely for funding community development for road safety and community road safety programmes. By negotiating and developing sound contracts for the purchase of community development for road safety and community road safety programmes, and effectively monitoring and following-up to support appropriate performance, a shared understanding between the agency and providers will be created. That is, the purpose, principles and required results from the funded activities are all clearly agreed.

The quality of the relationships with providers of both community development for road safety and community road safety programmes is fundamental to managing community road safety funding wisely (LTSA, 2003). The agency responsible for funding should:

- Develop effective working relationships with providers
- Manage community road safety funding professionally
- Manage funding arrangements with clear lines of accountability

- Effectively manage risk
- Contract agreements effectively

As a final measure, the following funding recommendations should ensure absolute transparency and accountability (Aeron-Thomas et al, 2002):

- Funding merits the same consideration as other technical aspects, i.e. road safety engineering, traffic law enforcement
- Governments should assume responsibility for road safety funding and ensure ministry budgets include road safety financing
- Road maintenance budgets and Road Funds should include a hazardous location treatment programme budget
- Road user charges should be used to provide a regular and dedicated funding source
- A proportion of traffic fines should be allocated to traffic law enforcement for road casualty reduction activities
- Road Safety Funds should be established for those activities not the direct responsibility of a ministry

References

Aeron-Thomas, A. Downing, A. J. Jacobs, G. D. Fletcher, J. P. Selby, T. Silcock, D. T. (2002). Review of road safety management practice. TRL Project Report, PR/INT/216/2002. Crowthorne: TRL Limited

LTSA (2003). Community road safety strategy 2003. Wellington: New Zealand Land Transport Safety Authority

Wetteland, T. and Lundebye, S. (1997). Financing of road safety actions. 3rd African Road Safety Congress. South Africa: Pretoria

3.2: STAKEHOLDER IDENTIFICATION

"Stakeholders are defined by a person or group of people who have a vested interest in the success of a project and the environment in which it operates." (DFID, 2001)

There are many stakeholders that can be involved in community road safety education, and in order for the road safety education products and services to be delivered most effectively, a participatory framework is required to manage the interaction between the various stakeholders. In the context of CRSE, stakeholders would constitute primarily poor and vulnerable groups that are at greater risk of road traffic accidents because of an inherent lack of awareness, education, and poor road user behaviour; as well as those responsible for imparting road safety education within the community. These might include:

- Road safety officers
- Community development workers
- Village committees, village councils
- Women's groups, farmers co-operatives, community associations
- Traditional leaders
- School teachers
- Illiterate and uneducated youth and adults
- School pupils and school leavers

There are three key stages to managing stakeholders in a community road safety education programme that comprise:

1. Identifying the stakeholders and assessing their needs and expectations – such as their expected behaviour, positive and negative impact of CRSE on them, likely reactions to the CRSE programme, and possible actions, extent of buy-in and interest in the problems and solutions.
2. Managing the stakeholders by influencing them to support the CRSE programme - what benefits can the CRSE programme offer them?
3. Identify, assess and manage peers, superiors and subordinates amongst the stakeholders. There is likely to be a hierarchical relationship between different stakeholders, influenced by political and economic pressure, but all stakeholders should be given a voice in identifying the road safety problem, and developing interventions to reduce the incidence of road traffic accidents, and alleviate the multiplier effects resulting from injury and fatalities.

Stakeholder Analysis

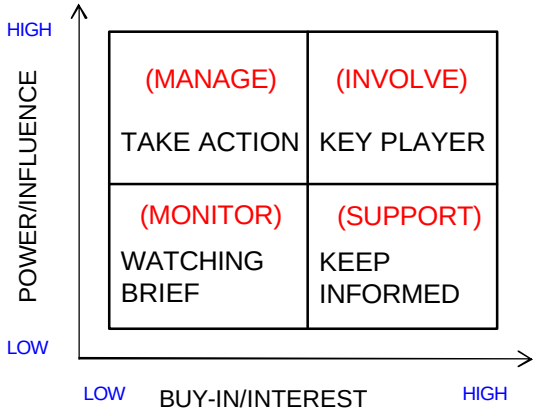
Stakeholder analysis is used to identify primary and secondary stakeholders and the relationships between them (DFID, 2001). Primary stakeholders are those that are directly affected by an activity (i.e. the desired beneficiaries of a project and the implementing agencies). Secondary stakeholders are indirectly affected by the activity (i.e. non-beneficiaries such as irregular road users, school educated children who learn road safety behaviour as part of the school curriculum, etc). Stakeholder analysis can help to reveal:

- The capacities of different stakeholders to participate in (and benefit from) development activity, and their perspectives on that activity
- The relative political power, access to information and institutional means to command attention of different groups
- The complexity of organisational relationships
- Gaps and overlaps in the roles and functions of different stakeholder groups.

If carried out properly, stakeholder analysis helps bring the poor into the development process and ensure that their views are incorporated into decision-making.

While working towards a common goal, stakeholders involved in CRSE programmes will undoubtedly encounter conflicts of interest. For this reason stakeholder analysis will help identify all stakeholders involved and will manage their needs and expectations, thus pre-empting conflict (see Figure 3.1).

Figure 3.1: Stakeholder analysis diagram



The principle of stakeholder analysis is such that different stakeholder groups are managed according to their level of influence on the project outcomes. Key players are those with a high level of influence and high interest in the project, and would include the road safety officers and teachers. Conversely, stakeholders which appear to have low influence and power require continuous monitoring in case they oppose any project objectives. These might include pressure groups or NGOs whose influence can grow and become a potential threat. The direct beneficiaries (children and adults who have received little or no education on road safety behaviour) tend to have a high interest – because they are often the victims of road traffic accidents – but yet have low levels of political power or influence in the community decision-making process. Management of projects typically comprises high influence over project resources and finances, and the delegation of technical responsibility and implementation, hence managers can be considered to have less buy-in to the project process and to the outcomes of stakeholder analysis. While stakeholder analysis is fundamental at the inception phase of a community road safety education programme, and is also required towards the end of implementation, it is also necessary for stakeholder consultation to be a continuous process throughout the project lifecycle.

The following checklist identifies who and what should be addressed in stakeholder analysis, and how potential conflicts may materialise:

✓ Who are the stakeholders in transport?
- Direct transport users (e.g. travelling public, shippers, distributive industry)
- Indirect transport users (e.g. households, consumers, agricultural producers, health-care providers, education providers)
- Transport facilitators (e.g. regulators, roads administrators, enforcement agencies)
- Transport providers (e.g. freight and public transport operators, road construction companies)

- Transport servicers (e.g. equipment suppliers, maintenance industry)
- Urban community (e.g. consumers, users of rural facilities)
- National community (e.g. defence and geo-political interests)
- External community (e.g. importers of rural produce, multi-national manufacturers and trading companies, tourists)

✓ What is the nature of each stakeholder's involvement in the transport sector?
- Transport related activities (qualified and quantified)
- Administrative activities (planning, funding, regulating)
- User demands
- Resources used (quantified and qualified)
- Funding (scale and sources)
- Performance measures (quantity and quality)

✓ What legislation covers the transport sector?
- Transport law, ordinances and regulations
- Employment law
- Finance and taxation law
- Environmental law
- Planning and development law
- Land tenure

✓ Where are the institutional conflicts in the transport sector, and how are they apparent?
- Administrative and regulatory (e.g. unclear or conflicting responsibilities, insufficient resources, inadequate legal underpinning) manifested in uncontrolled transport (e.g. poorly enforced safety requirements, restrictive operating practices) and ineffective development (e.g. weak planning processes)
- Human resource (e.g. ill-trained or insufficient staff) leading to poor transport performance (e.g. poor vehicle maintenance and driver standards) and development (e.g. inappropriate or inadequate planning)
- Funding (e.g. inadequate or unreliable revenue base) leading to poor performance (e.g. insufficient capacity to meet demand, inability to meet environmental standards, inability to recruit and train staff)

Being aware of all the key players and possible conflicts (and there may be others not listed above) provides an opportunity to develop a strategy to try and circumvent future problems. There may be a problem you do not recognise, but will be informed about if you ask the appropriate people the right questions.

Any change process will normally benefit from consulting those involved - provided that it is done in a sympathetic, timely and honest way. This holds true whether the change concerns an individual, an organisation or a community; and is especially true when there are plans that will markedly alter the way people lead their lives. This means that community road safety education programmes need to canvas the opinions of those that will be affected by any changes that occur as a result of the CRSE programme. The consultation process can add value to a wide variety of schemes for a number of reasons. A key reason is that the consultation process is likely to promote local awareness and ownership of the project and encourage stakeholder participation in achieving the objectives. This will mean that there is a much higher likelihood that the project will be

successfully introduced and that its implementation will be sustained over time. Issues involving community consultation and sensitisation are discussed in Section 3.3.

References

DFID (2001). Sustainable livelihoods guidance sheets. London: Department for International Development

3.3: COMMUNITY CONSULTATION AND SENSITISATION

"For community participation to be successful and sustained there needs to be large homogeneous groups within the community that accrue a benefit from having safe roads." (Wattam, 1998)

The concept of a community varies between projects, sectors, regions and countries. Three different types of community can be identified in terms of their legal/administrative, social and resource characteristics (Wattam, 1998):

1. Legal/administrative communities: These are usually defined by each countries' local government's legislation, which recognises a hierarchy of communities and codifies their administration in terms of traditional or political structures.

2. Social communities: These are defined by the members themselves and reflect the differentiation of the rural population by prevailing social, economic and cultural norms, which may be reinforced by residential segregation. Examples of these may be traders, farmers, and local administrators.

3. Geographical communities: These might be defined in geographic or planning terms and for example natural features or levels of demand/supply might be used to identify communal interests or catchment areas.

In simple terms participation is the active involvement of a community to take part or share in an activity. Types of participation are shown in Table 3.2 (Wattam, 1998).

Table 3.2: Types of participation

Participation Type	Characteristic
Passive participation	People participate by living in the area of the project. They may be told what is going to happen or has already happened but will have no other input.
Participation for material incentive	People participate by being paid for labour in food or cash, for a pre-determined project. This may be as a 'community' or as groups.
Participation by resource contribution	People participate by contributing a resource such as labour or money, to a pre-determined project.
Participation by consultation	People participate by being consulted (perhaps with options) on projects where the majority of the decisions have been made. Their view may or may not be considered.
Interactive participation	People participate by joining with external professionals in analysis of their situation, developing action plans and determining common projects.
Spontaneous mobilisation	People participate by taking their own initiative independent of external professionals to change their situation. This may lead to self-help projects or requests to other institutions for assistance.

An essential component of road safety education is community participation. Local communities constitute an invaluable source of information and knowledge specific to the geographical area such as traffic volume and composition, climate, flood history, etc, which makes their role in road safety (from planning to execution to long-term

Monitoring) a necessity. Due to budget constraints it is especially important that local communities prioritise road safety interventions and endorse decisions made by planners following consultation. Community driven development requires consultation at all stages of planning and the following groups should be involved in community-level decision making:

- Road user groups, private road associations, traders
- Traditional leaders
- Traffic police
- Village committees, village councils
- Women's groups, parent groups, farmers co-operatives, community associations

Local communities have the capacity to assert ownership of the road safety education programme, and can contribute the following to involve themselves in the road management process:

- Provide local information and knowledge
- Identify their priorities for road safety improvements by, for example, using participatory techniques
- Fundraise. It is unrealistic to expect large contributions from a poor community. However, if the community can contribute time or money towards the operation of a sustainable CRSE programme, for training target populations about road safety and in the provision of intervention materials, they are more likely to take ownership of the programme and continue raising awareness without external assistance.
- Define required technical standards – what do they expect, are these expectations affordable?
- Establish community trainers for rolling out the CRSE programme.
- Monitor social, economic and environmental change over time – in particular accident statistics, and the prevalence of road traffic and pedestrian accidents.

There is no prescriptive framework to secure community involvement in labour and materials for conducting a CRSE programme and even decision-making, and community consultation would not be participative if it were so. Nevertheless, beneficiaries of the interventions, specifically the road users will have a much larger stake in the CRSE programme if they become actively involved from the outset.

There are various techniques that a road safety officer or community development worker can use to encourage community involvement and facilitate a two-way interaction and learning process between those who 'enforce' road safety and road users (pedestrians and drivers). These are described in more detail, with working examples in Section 4, 'Problem Identification', and include:

Participatory appraisal: a variety of techniques adopting visual tools to relay needs and constraints, and possible solutions between community stakeholders and decision makers.

Semi-structured interviews: predetermine only some of the questions to be asked in an interview. Questions are asked to a flexible checklist and not from a formal questionnaire.

Questionnaire surveys: comprise village, household and vehicle operator questionnaires that explore travel and transport needs and constraints of a sample of stakeholder groups using structured, pre-determined questions.

A more detailed description of these techniques can be found in Section 4.2: Participatory Techniques, and 4.6: Roadside Surveys.

Assessment of capacity

The sustained capacity of a CRSE programme and a community to participate is an essential but often assumed project risk. For example, many communities will be willing to participate once, but in the longer term they may be less willing. At the community level capacity can be explored in the following areas:

- The extent to which the community can organise itself
- Human resources e.g. voluntary contributions by teachers, community development workers, school pupils and school leavers, community based organisations that can reduce programme costs and increase community responsibility and participation
- Existing programmes
- Financial resources.

Within all the above factors there is a need to assess the capacity within the sub-groups in the community e.g. men, women, children, old, young, infirm, very poor, etc. There are a number of methods of assessing the above that include interviews, questionnaire surveys and participatory group techniques.

Organisation forming and linking

From the capacity assessment, knowledge of the administrative or community leadership structure will be gained. Within this structure there are likely to be a number of sub-committees that deal with different sectors, including road safety (this is especially true in urban settlements). From the capacity assessment stage it will be clear whether or not they are capable of representing the community and participating in the project.

Representation of the community in these committees is essential on two counts. First, inadequate knowledge of the range of individual travel and transport patterns in a community, means that the planning and activities of the project may be biased towards a minority of the population. Secondly, if only these minority needs are addressed then it is likely that long-term sustainability will be undermined. Other links that can be formed are between planners, road safety engineers and educators, and other government and non-governmental organisations.

Planning and design

The previous three steps can all feed into or be an integral part of the planning stage in a project. The majority of the information collected can be used to shape the way in which the process of participation is going to continue as well as into the more detailed design and implementation stages.

To maintain the trust and relationship with the community that has been developed so far, their inclusion in the planning stage is vital. This should include both the planning for physical activities as well as managerial aspects.

Physical

Community representatives may not have high levels of technical knowledge but they will have knowledge of the local area and the problems they face and this knowledge can be of great value in deciding and prioritising where road safety interventions are required. A quick and simple way of gathering such knowledge is by using a map drawn by the community, showing physical features, services and accident 'blackspots'.

Transport improvements are likely to increase the mix of vehicles and the speed they travel on or near the community. This can lead to an increase in traffic accidents. These will have a direct negative impact on the community and so an awareness of traffic changes and holding a discussion on mitigating matters can improve the relationship with the community. Therefore, accident black spots should be discussed along with ways to decrease them such as signs and traffic calming measures.

Sustainability of community participation

The continuation of the community participation after the initial input or the end of the project is often neglected. As a result, many committees set up for the project also finish working with the project.

Maintenance is a long-term activity, therefore if community participation has proved to be useful it needs to be sustained. For sustainability there needs to be willingness on the part of the community and road safety officers, planners and other local officers.

This willingness can be engendered in a number of ways. In particular it is important to hold routine meetings. Many committees will only meet when there is an emergency, such as fatalities cause by a road traffic accident. Committees convening on this basis meet infrequently, and as a result, the community response to the road safety problem is reactive, rather than proactive. Therefore, when setting up or revitalising a committee, regular meetings should be convened (at least once every four months) from the start of the programme. This will help to sustain the commitment of community members for the CRSE programme, and to encourage involvement in road safety awareness campaigns, and annual safety weeks for drivers and pedestrians (refer to Section 5 'Developing Interventions' for further details).

Several of the benefits accruing from community consultation are considered below (Schwartz and Deruyttere 1996):

Stakeholder Commitment

Consultation may increase stakeholder commitment to a project. Without commitment, training may prove short-lived; with it, all the stumbling and complexity associated with new efforts can be overcome. Stakeholder commitment grows with stakeholder 'ownership' of projects.

Improved Targeting

Consultation can provide superior and more detailed information. In poverty reduction projects, consultation can improve identification of the poorest and least visible sectors.

More Reliable Data

In the process of consultation, stakeholders may provide each other and public officials with more valid and reliable information, thus increasing accountability. Improved understanding of local values, priorities and expectations can result in project designs and delivery mechanisms that are more compatible with socio-cultural conditions.

Improved Negotiating Skills

Research indicates that as the range and weight of community consultation grows, the capacity of the poor, of women, of youths and of other often overlooked groups to obtain project benefits increases. Social equity, in turn, increases participant commitment to the development process. Consultation also provides stakeholders with experience they can apply to subsequent projects. Where there is limited civic consciousness and a long history of dependence on local political bosses, experience with consultative mechanisms can trigger the long process that leads to participant empowerment in arenas outside the immediate project.

Cost Reduction

Consultation can generate a greater willingness for stakeholders to invest their time, labour and other resources in a project they 'own', thereby stretching the value of invested funds. Sociological and anthropological research on topics as disparate as ritual initiations and the design of public housing indicate that the more people invest in a process, the greater their commitment to its values and purposes.

References

Schwartz, N. and Deruyttere, A. (1996). Community consultation, sustainable development and the Inter-American Development Bank. Washington D.C: Inter-American Development Bank

Wattam, M. (1998). Community participation in rural transport infrastructure. Ardington: IT Transport Ltd

3.4: INCLUSION OF MACRO-MESO-MICRO LEVEL INSTITUTIONS

"The answer to community empowerment is not in delivering preconceived packages but in real institution building at different levels" (Ullah Jan, undated)

What is macro-meso-micro?

Macro-meso-micro refers to the level of policy and institutions that govern and influence development activities in all sectors. Development and growth is typically associated with macro-level economics and 'top-down' approaches, but this has more recently been superseded by poverty reduction approaches from the 'bottom-up', with an emphasis on community empowerment and capacity building at the grass roots. Broadly speaking, the following definitions describe each of these levels:

- Macro: large in scope or extent – global/national level institutions and policies
- Meso: intermediate/in the middle – provincial/district level institutions and policies
- Micro: the grass roots - community level institutions and policies

In road safety, policy and institutional decision making tends to take place at the macro level, with legislation being adopted, and often transferred from good practice cases in other countries (such as introducing alcohol breathalysers to reduce drink-driving). Yet, the legislation and interventions implemented may not be suitable for a given population. However, macro policy continues to be developed in isolation from the people it affects. The isolation of rural areas has frequently led to an underestimation of the impact upon rural people of policies and events emanating from the capital city or further afield at international levels. The focus of rural development has therefore tended to remain quite micro and local.

The importance of micro-meso-macro level linkages in any community road safety education programme cannot be overstated. At the macro level, holistic national strategies are required on issues such as poverty, rural development, and local economic development for the planning and development of programmes that will be appropriate for poor road users. The meso interface between the micro-level understanding of road user behaviour interspersed with macro-level policies is best managed at district level, where services can be much more responsive. For this to be effective decentralised policies and action are required.

Practical application of CRSE programmes at macro/meso/micro levels

Participatory processes at the macro level involve three key transitions. The first transition is from participation in a micro (project) context to a macro (policy and program) context. Secondly, this involves moving from community consultations to civic engagement with local and national stakeholders, parliamentarians and various government institutions. Finally, participation has advanced from using participatory methods to influencing poverty reduction outcomes. These approaches involve going beyond a consultation process for producing a document (i.e. Poverty Reduction Strategy Paper) to a process that focuses on formulation, implementation and monitoring of poverty reduction strategies.

Participation at the macro level can increase the transparency of decision-making, improve government accountability to the citizens, and as a result, increase the overall governance and economic efficiency of developmental activities. Participation is the process through which stakeholders' influence and share control over priority setting, policy-making, resource allocations and access to public goods and services. Such participation helps produce poverty reduction outcomes (Goldman, 2000).

The following checklist could be adopted for all CRSE programmes to ensure that the critical linkages between each institutional level are considered and adopted:

Micro level

- Are rural people active and involved in managing their own development?
- Is there a dispersed and active network of local service providers?

Meso level

- Are district (lower meso) services effective, coordinated and responsive?
- Is the region/province (upper meso) level supportive and supervising the districts?

Macro level

- Is the centre (province or nation) providing strategic direction, redistribution and oversight?

Macro level road safety considerations

Jacobs et al (1999) list the following as key requirements for road safety actions at the national level:

- Establishment of road safety action plan with funding
- Trained road safety teams
- A reliable and accurate road accident information system
- Road safety audits, which should be the norm for all road improvement schemes, with vulnerable road users taken into account at the design and construction stages
- Co-ordinated road safety action plans with realistic targets
- A road safety management system with responsibilities and accountability clearly identified
- Road accident and injury information systems
- Road safety funding
- Safe planning and design of roads including road safety audit of new schemes
- Improvement of hazardous locations
- Urban safety and traffic calming
- Road safety education of children including school programmes and parent to child advice organised through community information networks
- Driver training, testing and licensing with priority on professional drivers and high risk drivers
- Road safety publicity campaigns
- Traffic legislation
- Traffic law enforcement

- Emergency assistance for road accident victims
- Road accident costing and decision making systems
- Evaluation and research and development

Meso/micro level road safety considerations

Top priority should be given to understanding the problems of pedestrians and public transport operations and developing and evaluating the following improvements (Jacobs et al, 1999):

- Road safety education in schools
- Road safety information for parents via existing community communication systems e.g. women's groups and health centres
- Footpath and pedestrian crossing facilities
- Traffic calming and speed limits
- Urban safety management
- Driver training to agreed standards
- Improving enforcement of e.g. speed, dangerous overtaking, driver stopping behaviour at crossings, limiting working hours, and drug/alcohol controls
- Training, testing and screening of professional drivers
- Management of safety of bus operations including vehicle maintenance
- Medical care particularly at the scene of an accident

Decentralised approaches are needed, in which the district level acts as the interface between micro-level understanding of clients, with macro-level policies, and provides the key intermediation in terms of matching poor peoples' preferred outcomes and strategies with appropriate service delivery. At levels higher than district the complexity of achieving effective coordination and integration of services and programmes becomes too great (Goldman, 2000).

Above all, national strategies are needed on poverty, rural development, local economic development and decentralisation, whose design and implementation are based on a real understanding of micro-level realities.

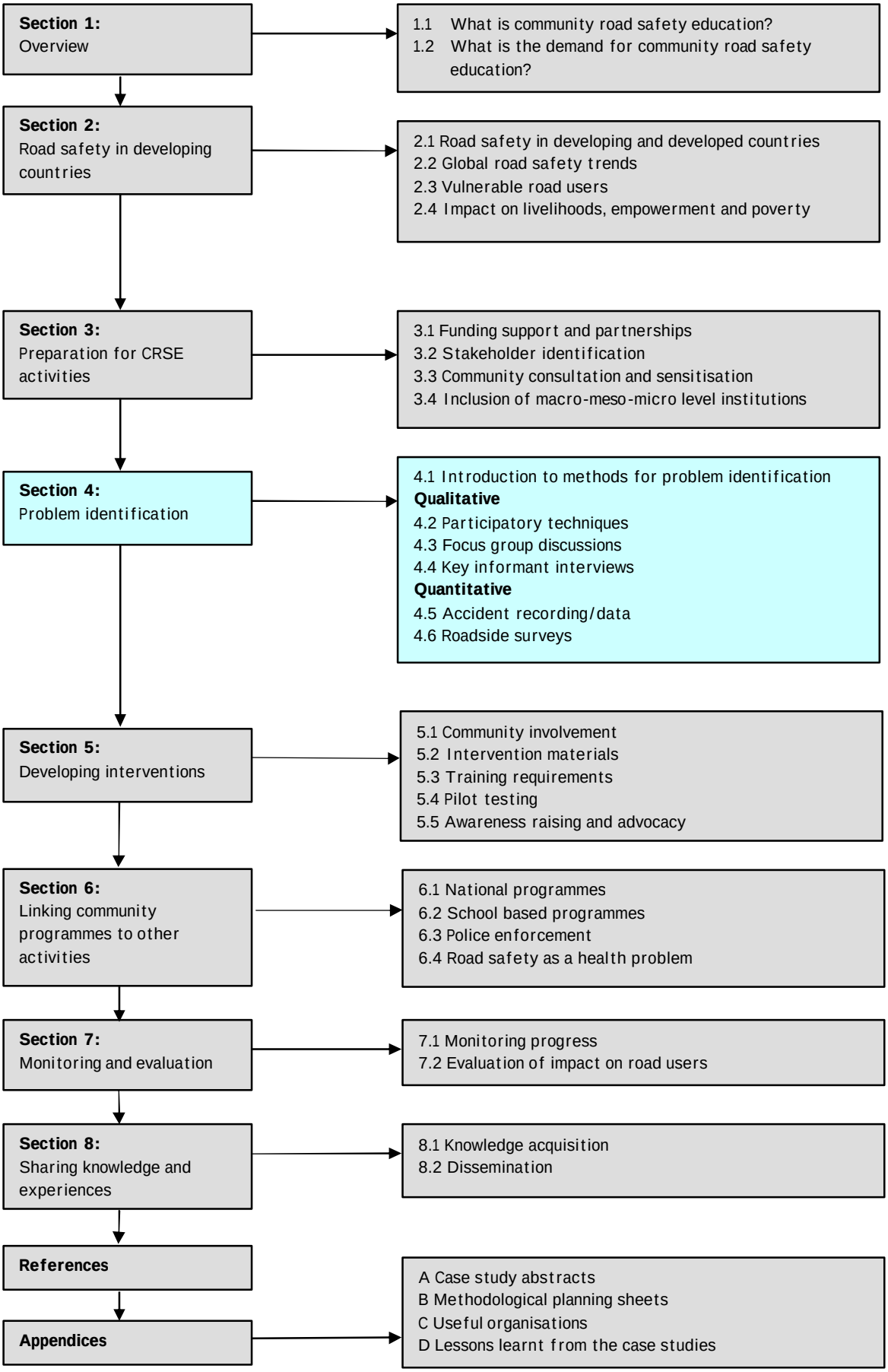
References

Goldman, I. (2000). Micro to macro: policies and institutions for empowering the rural poor. South Africa: Khanya

Jacobs, G. D. Maunder, D. A. C. Astrop, A. Sayer, I. A. and Downing, A. J. (1999). Transport safety for the urban poor. TRL Unpublished Report PR/INT/154. Crowthorne: TRL Limited

Ullah Jan, A. (undated). How to develop meso-level, representative institutions. Pakistan: Integrated Regional Support Programme

Section 4: Problem Identification


Section 1:
Overview
1.1 What is community road safety education?
1.2 What is the demand for community road safety education?
Section 2:
Road safety in developing countries
2.1 Road safety in developing and developed countries
2.2 Global road safety trends
2.3 Vulnerable road users
2.4 Impact on livelihoods, empowerment and poverty
Section 3:
Preparation for CRSE activities
3.1 Funding support and partnerships
3.2 Stakeholder identification
3.3 Community consultation and sensitisation
3.4 Inclusion of macro-meso-micro level institutions
Section 4:
Problem identification
4.1 Introduction to methods for problem identification
Qualitative
4.2 Participatory techniques
4.3 Focus group discussions
4.4 Key informant interviews
Quantitative
4.5 Accident recording/data
4.6 Roadside surveys
Section 5:
Developing interventions
5.1 Community involvement
5.2 Intervention materials
5.3 Training requirements
5.4 Pilot testing
5.5 Awareness raising and advocacy
Section 6:
Linking community programmes to other activities
6.1 National programmes
6.2 School based programmes
6.3 Police enforcement
6.4 Road safety as a health problem
Section 7:
Monitoring and evaluation
7.1 Monitoring progress
7.2 Evaluation of impact on road users
Section 8:
Sharing knowledge and experiences
8.1 Knowledge acquisition
8.2 Dissemination
References
Appendices
A Case study abstracts
B Methodological planning sheets
C Useful organisations
D Lessons learnt from the case studies

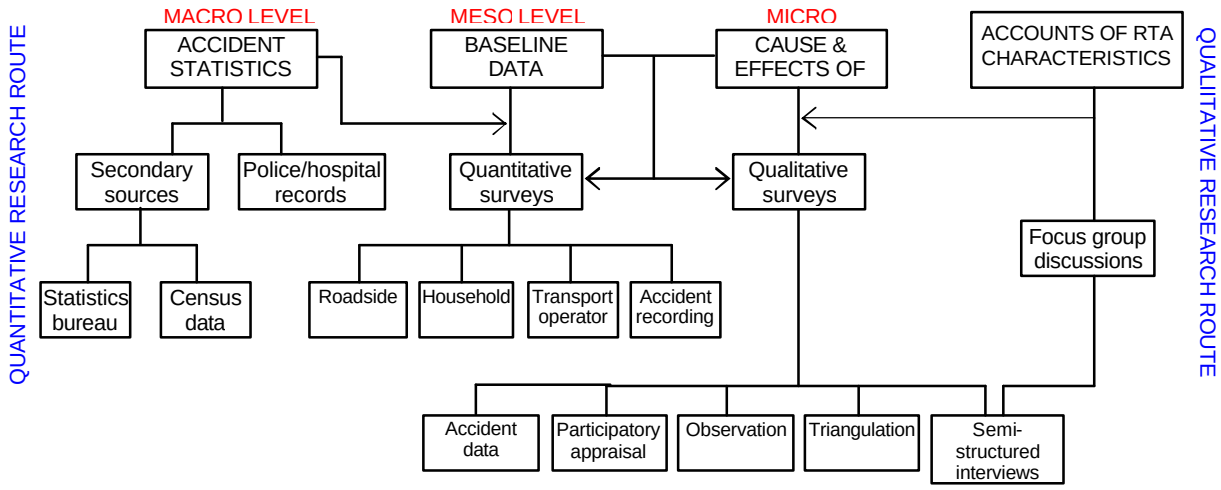
4.1: INTRODUCTION TO METHODS FOR PROBLEM IDENTIFICATION

"*Qualitative* research does not seek to establish absolute values for the things it investigates; its aim is to build up an accurate interpretation of what is being researched through triangulation of many descriptive sources. *Quantitative* research seeks to place reasonably firm, absolute levels or values on the things it investigates." (DFID, 2001)

Why is problem identification important?

In developing a problem statement for road safety, it is necessary to find an appropriate entry point into the development of a community road safety education programme. It is important to take a holistic approach throughout this process, taking into account the safety concerns of different demographic and stakeholder groups, whilst addressing both the potential education (and engineering) strategies to be used in any effective intervention, and the existing institutional and policy environment. All will have an impact on how effectively a CRSE programme is designed, and executed, and how the causes of road traffic accidents and associated injuries and fatalities can be addressed. To understand the behaviour and characteristics of different actors that are vulnerable to road traffic accidents and their role in accident prevention, a variety of qualitative and quantitative techniques can be used, as demonstrated in Figure 4.1.

Figure 4.1: Adopting appropriate survey techniques for 'problem identification'



Very often road safety interventions are undertaken without a full understanding of a communities travel behaviour (driver and pedestrian journeys) and how this is influenced by social behaviour, and the consequences of implementing road safety interventions or adopting the 'do nothing' scenario. There is also little appreciation of the many problems faced by the various organisations trying to deliver improved road safety programmes.

Collection of appropriate data from different stakeholders at the micro, meso and macro levels can help to identify where existing road safety programmes are failing, and how communities can contribute to the design and operation and execution of their own road safety education programmes. Once a problem statement has been produced it is

possible to design more appropriate and effective interventions.

Quantitative survey methods that can be employed in the collection of accident data are not exhaustive, but include:

- Roadside, household and transport operator questionnaire surveys
- Police accident records
- Hospital records

The dangers of depending on formal sample surveys are well documented. Ellis (2000) has criticised them for relying on one-visit questionnaires for data collection which yield dubious results and can make significant errors when misrepresenting household income and expenditure and failing to enquire about absent household members. They are also critically dependent on the questions asked. Yet, Ellis acknowledges that neither conventional questionnaire surveys nor more community-focussed participatory methods provide, as separate packages, a complete approach to investigating livelihood diversity, and that 'a combination of the two approaches is required, each serving different but complementary roles within an overall research design.' Sections 4.5 and 4.6 will describe how to undertake accident recording and conduct roadside surveys.

Qualitative techniques are used to undertake an intensive, systematic but semi-structured learning experience carried out in communities for the extraction of qualitative data, by providing the opportunity for real interaction (and learning) by both parties. This entails local people analysing their own conditions and choosing their own means of improving them. Such participatory approaches use visual tools to represent different livelihood issues of community groups, with the support of a trained facilitator. The key principles of participatory appraisal (PA) include participation, teamwork, flexibility and triangulation, where information is derived from more than one tool to ensure the qualitative data are valid and reliable.

Section 4.2 on Participatory Techniques will introduce the concepts and principles of PA in more detail, along with a sample of typical tools that can be adapted for research to identify road safety problems, in order for a suitable CRSE programme to be developed for addressing the problems in question. Section 4.3 considers the use of focus group discussions.

Participation is not a methodological panacea, and is best employed alongside conventional quantitative surveys, which will glean data that can be measured with some accuracy, and then corroborated by consultations with community members in a participatory manner. Neither questionnaire surveys, nor participatory techniques are mutually exclusive, and participatory research can produce quantitative estimates through aggregating qualitative information. Each method has its strengths and weaknesses, and a combination of qualitative and quantitative research methods is required to avoid biases, misinterpretation of results and incorrect responses.

References

DFID (2001). Sustainable livelihoods guidance sheets. London: Department for International Development

Ellis, F. (2000). Rural livelihoods and diversity in developing countries. Oxford University Press

4.2: PARTICIPATORY TECHNIQUES

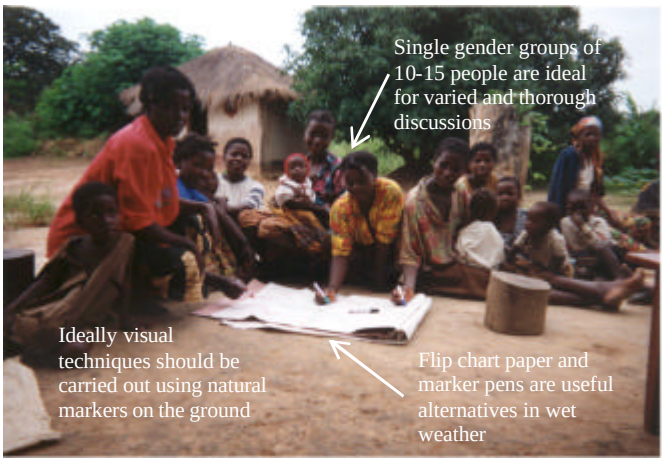
"a growing family of approaches, methods and behaviours to enable people to share, enhance and analyse their knowledge of life and conditions, and to plan, act, and monitor and evaluate" (Institute for Development Studies, 1996).

Why participatory techniques?

The term 'Participatory Appraisal' (PA) is one that is frequently used interchangeably with 'Participatory Learning and Action' (PLA), 'Participatory Rural Appraisal' (PRA), 'Rapid Rural Appraisal' (RRA), and 'Participatory Urban Analysis' (PUA). PRA and RRA emerged as an alternative to the two common qualitative methods of questionnaires (which often proved lengthy, costly and prone to errors), and (sometimes rushed) site visits by researchers to collect haphazard data from local 'elites'. PA uses a combination of approaches and methods to enable rural people to share, enhance and analyse their knowledge of life and conditions, to plan and to act. PA methods are based on some simple principles:

- A reversal of learning, to learn with and from rural people, directly, on the site, face to face, gaining from local, physical, technical and social knowledge
- Learning rapidly and progressively, with flexible use of methods, improvisation, iteration, and cross-checking, being adaptable in a learning process
- Seeking diversity. Looking for, noticing and investigating contradictions, anomalies and difference
- Triangulating. Using a range of methods to ensure reliability and validity, and to enable cross-checking
- Facilitating by the local people. Facilitating, investigation, analysis, presentation and learning by rural people themselves, so that they present and own their own outcomes

The participatory approach is particularly useful as it enables vulnerable groups in a community to have a voice and impart their views on issues of road safety and other issues from which they are most often excluded. Hence, participation by different groups such as women, the elderly, disabled and school children, researchers and other professionals can be encouraged.



Participatory approaches are not substitutes for, but are rather an integral part of, long term dialogue and sustained interaction. A single, brief participatory exercise with a group of local people will not lead to positive and lasting change. PA is not a panacea to qualitative surveying. PAs work most effectively where they are carried out over a sufficient length of time, with the

facilitators living amongst the community under survey and absorbing themselves in community life. In this way, mutual respect will be gained, and less formal information can be extracted. In addition, the longer the survey, the greater and more representative the sample will be.

Participatory appraisal should:

- Involve local people in the selection, design, planning and implementation of programmes and projects that will affect them, ensuring that local perception, attitudes, values and knowledge are fully taken into account
- Generate more continuous and comprehensive feedback as an integral part of all development activities

The process of using PA techniques is discussed in more detail below:

Preparation: PA's require thorough preparation. Requirements for effective implementation include:

- Secondary data on the locality and specific subject areas to be reviewed prior to survey implementation.
- A team of at least two experienced facilitators, fluent in the language of the ethnic group under survey is imperative for facilitation of PA methods, and comprehensive recording of visual and verbal data (note taking is sufficient) is required. Ideally, facilitators should have detailed knowledge of the locality and customs, and bear no prejudice or hierarchical position.
- Surveys should avoid large PA teams, which might intimidate the indigenous population.
- In very remote areas, it may be useful to stay overnight in the village to save travelling time, and to maximise interaction with local people.
- Due to the poor condition of rural roads, it is necessary for the PA team to have suitable transport (a four wheel drive vehicle equipped with spare parts in the event of a breakdown or emergency).

Facilitation: PA facilitators are likely to be experts. However, factors to consider when undertaking PA methods include:

- External professionals should display good facilitation skills, which encourage local people to participate in the investigation. A variety of techniques are used depending on circumstances. These include mapping, diagramming, ranking, scoring, (Joachim and Grady, 1991; Mikkelsen, 1995; Pretty et al, 1995) - see Figures 4.2 to 4.8 for examples.
- The outputs from the different techniques then need to be carefully balanced (since contradictions may occur) during the analysis, presentation and planning.
- Information acquired from the PA techniques and data analysis should be disseminated to the villagers, as well as institutional and Government representatives at the district, provincial and national level, to maintain communications between decision-makers and beneficiaries of transport focused policy.
- In order to reinforce interaction with villagers, PA visual representations should ideally be carried out on the ground, using natural markers such as stones, beans, seeds, leaves etc, and writing on the ground using sticks, chalk or charcoal. A member of the PA team should copy down the 'visual' onto paper as a permanent record as soon as possible. In the event of adverse weather conditions, flip chart

paper and marker pens can be used. However, the use of paper as an alternative to the ground limits the amount of space available for villagers to participate.

One of the strengths of PA is that many of the methods are visual and, therefore, accessible to a larger group of people, especially in communities with low literacy rates. Group activities can also be very dynamic and promote further discussions, other than that which is pre-prepared. A description of some selected PA methods and their application to CRSE programmes are covered below.

Triangulation

Triangulation is simply a method of linking different survey methods in order to cross-check the information collected from each technique. These are often carried out in groups of three to increase the credibility of each survey technique. Triangulation is of particular use when employing mapping, ranking and scoring, flow diagrams, venn diagrams and wealth ranking techniques, as these involve group participation which may require some verification.

Observation

Prior to conducting any PA techniques, researchers should be clear in their mind as to what exactly it is they are researching, and to have some realistic objectives for the PA surveys. Although much of the techniques employed in PA are flexible in their content and design, it is important to have some questions in mind at all times, to capture the issues of relevance to the community in their entirety. Researchers should act on what they see, and recognise distinctions in gender, age, and wealth etc. amongst the community. Observation also aids improvisation, particularly when carrying out diagramming techniques, allowing household implements, for example, to be used in the PA methods.

Participatory Educational Technologies

Participatory Educational Technologies (PET) is a dialogical approach to learning, where both facilitator and learner are actively engaged in the learning process, ideally in an atmosphere of acceptance and trust. Education is seen as a process of communication and dialogue. This is a problem-posing approach that leads to action for change. The approach involves techniques such as participatory theatre, modelling and mapping and various participatory group methods.

Through the school based PET Project, conducted by CSIR in South Africa, teachers have been provided with additional skills and methods in the traffic safety teaching environment, and provided students with a practical understanding of the research and development process of a product (Vermaak, 1998,1999,2000).

An alternative education model such as PET can provide a number of traffic education benefits in communities, including:

- Entry points for discussion of safety issues
- Raised awareness and understanding of the situation through exploration of issues
- Different representations of the problems and issues, which can be understood by entire communities
- Tools for exploring and planning interventions and their evaluation

PET has the potential to influence road safety education programmes amongst a whole range of road user groups, including primary school children, high school children, adults and poor and vulnerable members of the community. Its principles stem from participatory approaches and methodologies in a road safety education context.

Although PA techniques have a potentially wide application in the field of project development and research, it is important that they are applied appropriately, with sufficient resources and should not be conducted hastily. The process of carrying out PA methods requires mutual respect and trust between external facilitators and participants. This takes time and requires an understanding of the local culture. Hence, the general messages to consider are to be prepared to listen (rather than talk), avoid being dogmatic, be flexible in field study design without losing direction, be sensitive to the context of the field study and adjust the approach accordingly.

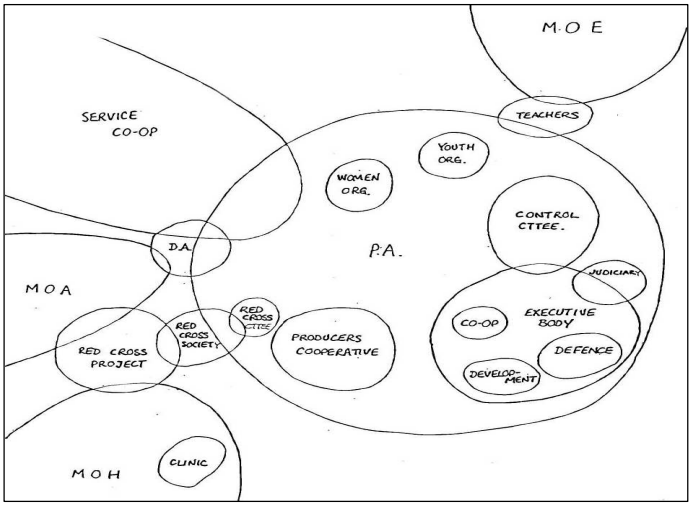
The following is a list summarising lessons learnt from existing PA surveys:

- A common mistake is that projects do not contact local government officials from the start - hence there is no local government support which is a prerequisite for success
- The step from problem identification with participatory PA methods to follow up project definition is often poorly prepared
- Facilitators should leave any class and gender biases they may carry at home!
- There should be continual analysis of the qualitative data whilst in the field
- PA methods require that the researcher knows the context and participates
- Dialogue between the target group and facilitators will be of benefit to both parties. The researcher must be able to listen but also to establish dialogue and share their own experience
- Very few project results are shared with the people who most need them. The filters are too many and too closed
- Participants are introduced to a 'code of conduct' taking account of:
    - Times suitable to the villagers
    - Cultural protocols
    - Avoid raising expectations
    - Avoid lecturing - listen and learn
    - Stay in the village throughout the session

Participatory tools are extremely diverse and should in no way be applied as a blueprint for community development. Rather, they can inform the learning and reflective process and help respondents to visualise both problems and solutions.

A number of PA techniques (not restricted to CRSE activities) are briefly discussed below.

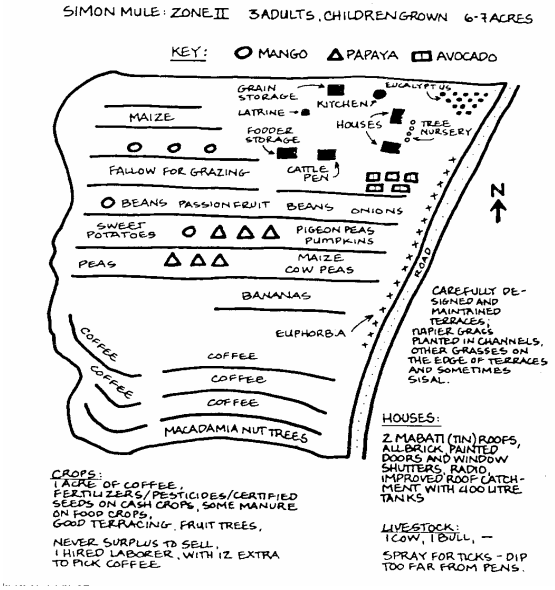
Figure 4.2: Mapping exercises: venn diagram



Source: Ethiopian Red Cross Society (1988)

Venn diagrams: these can depict key institutions, organisations and individuals, and their interaction with the local community. Key players in decision making are shown, and the institutions analysed can be both local ones internal to the community, and external ones that have a local influence. Each institution is usually represented by a circle. The size of the circle represents the importance, significance or power of that institution, and the degree of overlap between the circles represents the level of interaction that occurs. In the rural transport context, Venn diagrams can be used to demonstrate the interaction between local villagers, transport operators and local government.

Social / Resource mapping: these maps can be used to identify the comparative location and importance of different social elements and resources within an area. Social maps can be used to locate land-use, houses, services and infrastructure within an area. Maps can be used as a visual stimulant, to identify the parameters faced by local people and to facilitate discussion about the importance people place on infrastructure and transport service provision etc.



Source: National Environmental Secretariat

Ranking and scoring techniques: these are used to assess people's expectations, beliefs, attitudes, preferences and opinions. Ranking and scoring means placing something in order:

- Ranking: putting in order
- Scoring: weighting differences

This is a useful tool to be used in generating basic information which helps to focus further questioning. In a transport context, ranking and scoring techniques can be useful for obtaining information such as journey origin and destination, journey mode, journey purpose, frequency and cost etc.

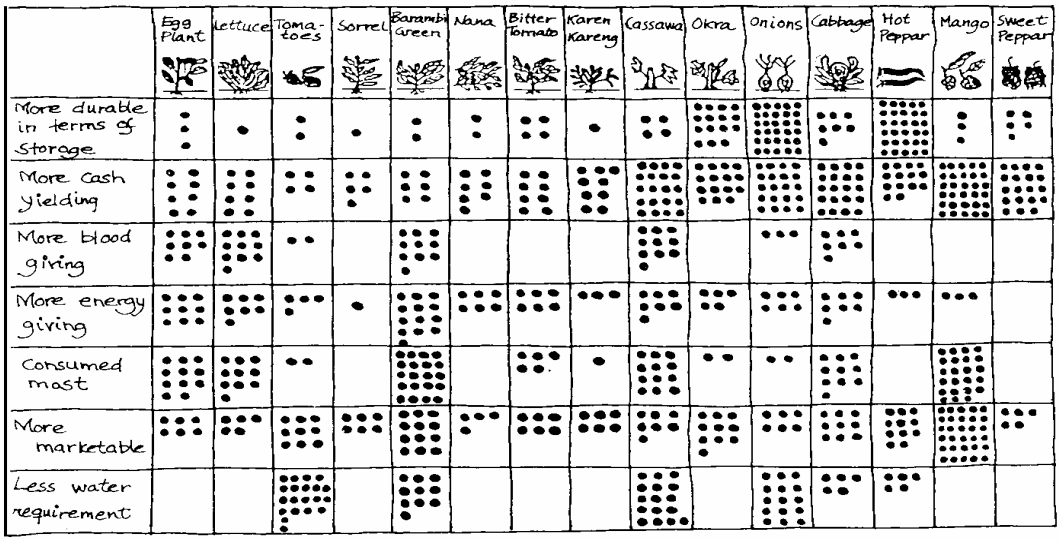
Matrix ranking: this involves listing key criteria (which have been predetermined by the community) down one side of a matrix table, and the measure by which they are to be judged (gained from informal discussion or pairwise ranking), across the top. Each element is then considered in terms of each criteria and a score is given on the basis of

each criteria. This method can be undertaken to establish local perceptions of efficiency for different transport modes in relation to their cost, frequency, availability, energy and time consumption and safety. An alternative is to use pairwise ranking (see Figure 4.3).

Wealth ranking: Wealth ranking enables villagers to divide households in the community according to economic and other 'well-being' categories including animal ownership, type of house, size of family, farm size and bicycle or ox-cart ownership etc. This helps identify target group members for projects, specifically the poorest sections of a society. Differences in wealth and well-being affect peoples' perceptions and coping strategies. It is important to understand this prior to further appraisal or planning.

Figure 4.3: Ranking exercises

Matrix Ranking



Source: ActionAid (1992)

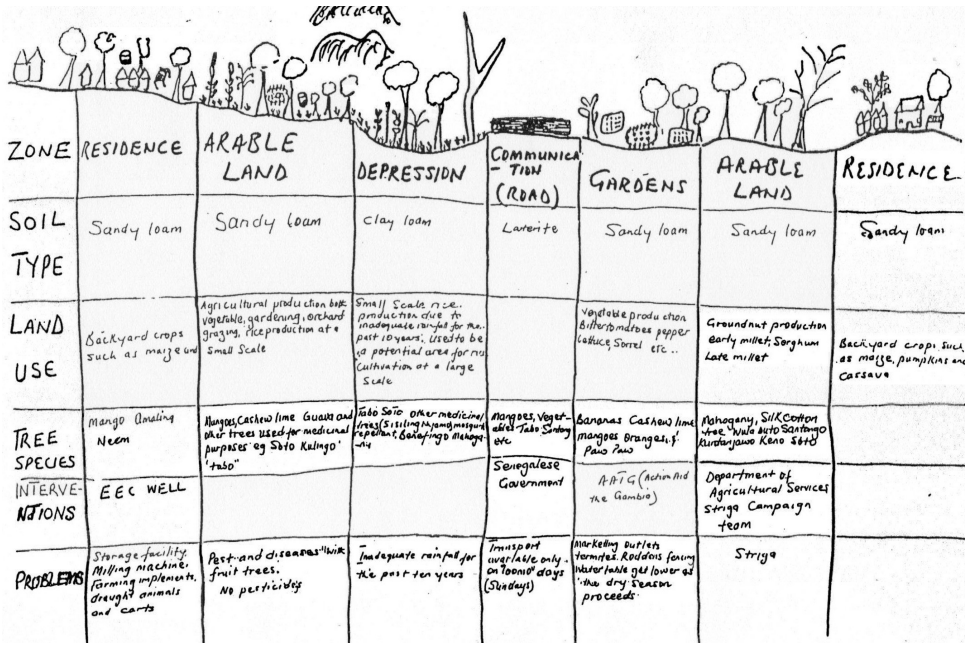
Pairwise Ranking

Walking (Preference 1)	**Bicycle** (Preference 2)	**Ox-cart** (Preference 3)	**Bus** (Preference 4)	**Car** (Preference 5)	**ITEM**	**SCORE**	**RANK**
	Bicycle	Ox-cart	Bus	Car	**Walking** (Preference 1)	**0**	**E**
		Ox-cart	Bicycle	Car	**Bicycle** (Preference 2)	**2**	**C**
			Ox-cart	Car	**Ox-cart** (Preference 3)	**3**	**B**
				Car	**Bus** (Preference 4)	**1**	**D**
					Car (Preference 5)	**4**	**A**

Transect Walk: this involves conducting a transverse or walk across a community with a group of key informants to identify and analyse distinct land use, transport use and production characteristics, as well as problems and constraints in the community. The group should proceed along the transect (typically of 1-2 km in length) slowly observing

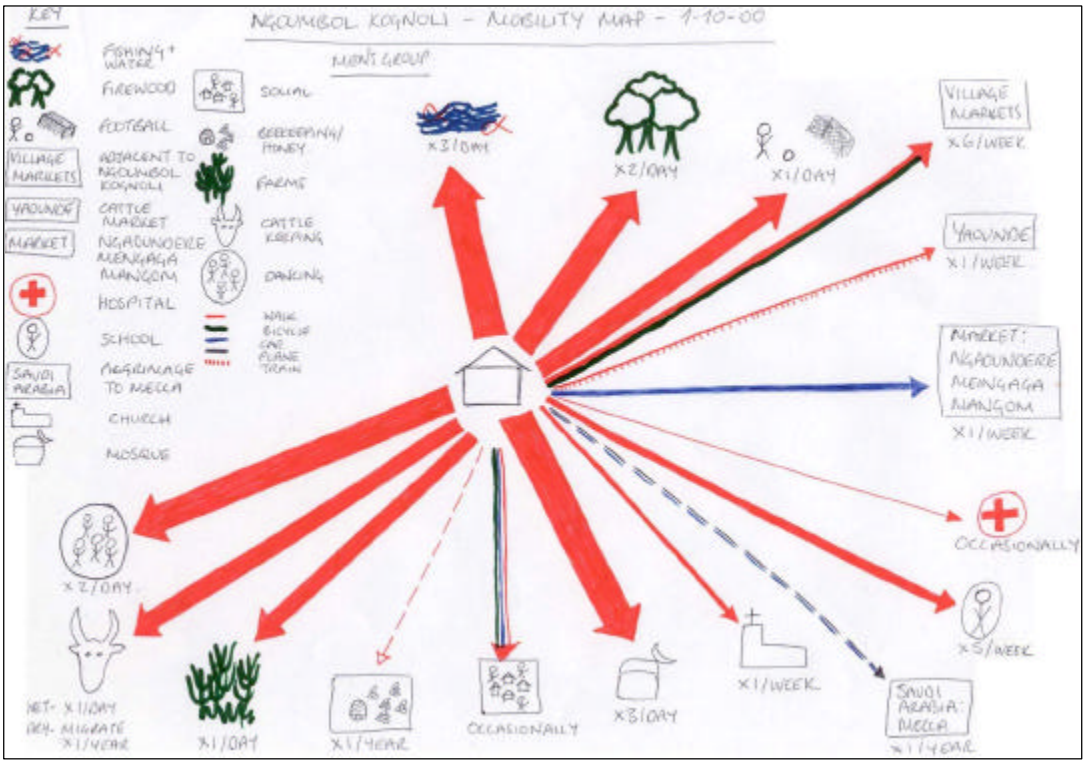
the most prominent characteristics along the way. After the visual walk, the community members and facilitator can reproduce the transect diagram.

Figure 4.4: Transect walk



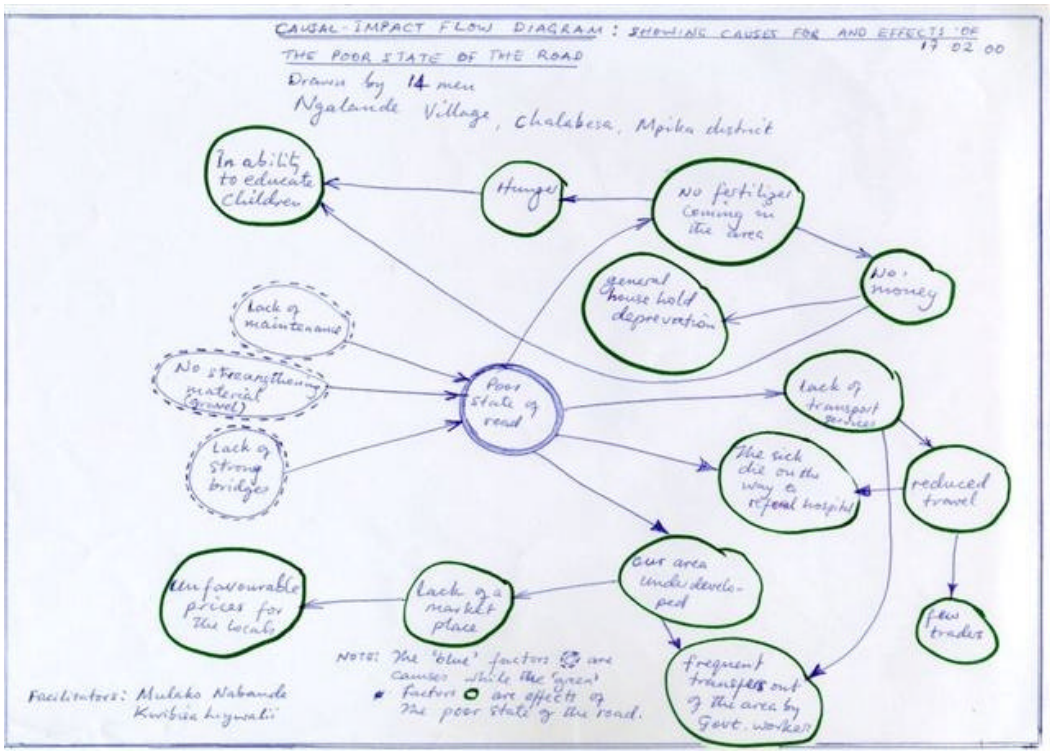
***Mobility charts**:* a tool utilised for discerning trip distance, destination, frequency and modal choice of daily income and non-income earning activities presented in a schematic diagram. The chart can be drawn as a spider diagram, with participants drawing arrows from their 'household' at the centre of the diagram in varying thickness and colour to denote frequency of trips and different transport modes respectively. The arrow points towards a drawing, which represents a particular activity for which the journey has been made.

Figure 4.5: Mobility chart



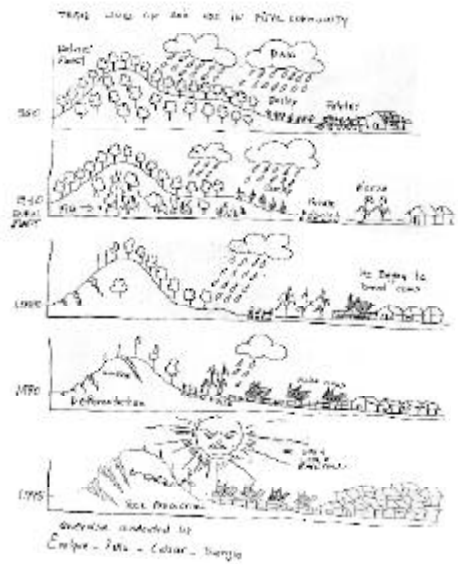
Causal Impact Analysis: this can be used to probe into the cause and effect of particularly acute problems faced by communities, their strategy for alleviating the impact of these problems, and their prioritisation for problems that require external intervention most urgently. This can be achieved by using a flow diagram with the problem statement at the centre and cause and effects of the problem emanating from the midpoint.

Figure 4.6 Causal impact analysis



Trend Analysis: a tool for presenting data collected as indicators of change. Time lines record changes over time to a community, perhaps highlighting important 'historical' events. Seasonal calendars record seasonal factors or activities within a community. Trend analysis tools can be presented as a bar chart, a transect through time, or as a series of pictures depicting the nature of change.

Figure 4.7: Trend analysis



Source: CIDT (2001)

Figure 4.8: Discussion starters

Discussion Starters: When discussing transport issues with a community, visual aids are a useful mechanism for generating debate and obtaining ancillary information. Laminated 'flash cards' showing, for example, different types of intermediate means of transport (IMT) can give rise to a commentary relating to the utility and safety of intermediate modes and their effectiveness under different climatic conditions.

References

ActionAid (1992). From input to impact: participatory rural appraisal for ActionAid the Gambia.

CIDT (2001). Participatory learning and action, training course. Walsall: Centre for International Development and Training, June 2001

Davis, A. (ed.) (2001). Participatory rural appraisal. The Rural Transport Knowledge Base. Crowthorne: TRL Limited. www.transport-links.org/knowledgebase.htm

Institute for Development Studies (1996). The power of participation: PRA and policy. Policy Briefing, Issue 7; August 1996. Brighton: Institute of Development Studies

Joachim, T. and Grady, H. M. (1991). Participatory rapid appraisal for community development. London: International Institute for Environment and Development

Mikkelsen, B. (1995). Methods for development work and research: a guide for practitioners. New Delhi: Sage Publications

National Environmental Secretariat (1990). Participatory rural appraisal handbook, conducting PRA in Kenya. Nairobi: Natural Resources Management Support Series No. 1

Pretty, J. N. Guijt, I. Thompson, J. Scoones, I. (1995). Participatory learning and action: a trainers guide. London: International Institute for Environment and Development.

Vermaak, L. (1998). Participatory road safety educational technologies (PET): a community driven approach. Proceedings of the South African Transport Conference. September, 1998. Pretoria

Vermaak, L. (1999). Community driven traffic safety: an action research approach. Master of Arts in Social Science, University of South Africa

Vermaak, L. (2000). Children moving road safety technology into the future: school participatory educational technologies. Proceedings of the 9th International Conference on Safe Communities. 26-28 February, 2000. Dhaka, Bangladesh

4.3: FOCUS GROUP DISCUSSIONS

"Focus group interviewing is about listening. It is about paying attention. . . . being non-judgmental. . . . When used appropriately, the process improves listening and the results can be used to benefit people who shared the information. And people go away feeling good about having been heard" (Krueger and Casey, 2000)

What are focus groups?

Group discussions, or 'focus groups', are essentially a way of listening to people and learning from them. Group discussions create a process of sharing and comparing among respondents. A discussion group or a focus group usually involves between six to twelve people and, although conversation is usually structured around a discussion topic guide, it allows spontaneous and deep seated feelings on a subject to emerge naturally. Conventional groups last from around one and a half to two hours. Respondents are mobilised with specific criteria in mind and the group is run by an appropriate facilitator. The facilitator's job is to encourage respondents to contribute their thoughts, feelings, and ideas to the discussion.

Focus groups are aimed at encouraging participants to talk with each other, rather than answer questions directly to the moderator whose task is to steer the group's discussion rather than providing personal input. The group interaction of focus groups is important because it gives some understanding of how the people are thinking about the topic.

The questions asked of the group are usually 'focused'. This means that they focus on one or two main topics, to get a really detailed idea about how the people think about the area of interest. They are also focused because participants of any focus group usually share common characteristics, such as age, sex, educational background, religion, or something directly related to the topic being studied. This encourages the group to speak freely and share common experiences.

How can focus groups be used in community road safety programmes?

Focus groups can be used in many different ways in road safety programmes. They can identify road safety issues of importance to the community, explore a new area of interest about which little is known, or they can establish what the community thinks about a new project plan, such as road safety interventions and engineering measures, and check whether the plan is appropriate for the community. Focus group discussions can help resolve project constraints. For example, if a road safety intervention project did not appear to be changing the driver or pedestrian behaviour of the community, then focus groups can explore the reasons why. Focus groups can also be used when evaluating

a project. They can elicit the community's ideas about how useful the project is, and identify ways of improving it, and subsequent programmes.

It is important for facilitators to be clear about how they will use focus group results. The list below gives examples of how they might want to use the information:

- To get ideas about what the whole community sees as important issues relating to road safety, including those who are typically excluded from conventional curriculum based programmes (i.e. children and adults who have not attended school) so that an appropriate road safety programme can be developed with assistance from the community to give them ownership of any intervention adopted
- To have additional information about road safety issues to be used with results from other related studies
- To help the team become more familiar with the area and the communities who live there
- To assist decision makers with future plans to benefit the community

Interaction between respondents and honesty are some of the advantages of this qualitative method. Focus groups are also an excellent way of allowing issues salient to the participants to emerge which may previously have been unknown to the facilitator.

Structuring a focus group discussion

A popular format for the focus group interview is a 'funnel structure'. The beginning section is broad and less structured. The goal is to hear participants' general perspectives. The middle section is more structured, and the goal is to lead into, or begin to cover, the topics of most interest to the development of a CRSE programme (see Appendix B1). The ending section is narrow and the most structured. The goal is to obtain answers to your specific needs assessment questions. The final question in a focus group often returns to a broader, more general wrap-up.

The facilitator should write up 'on-site summaries' immediately following the session. If these summaries are going to be the primary source of data (i.e. the session is not going to be taped or video recorded), they should be written with a question-by-question format to capture what the group had to say regarding each topic, or needs assessment question. Also comparisons should be made with other groups. These on-site summaries can be enhanced using field notes taken by a facilitator, an assistant or observer during the focus group session.

It is sometimes useful to produce a 'group problem' matrix (see Appendix B2).

Summary of focus group discussion benefits and disbenefits

The Academy for Educational Development and Education Development Center (2004) lists a series of advantages, disadvantages and guidelines of using focus groups. These are summarised below:

Advantages:

- Like other qualitative methods, focus groups give insights into not just *what* participants think, but also *why* they think it
- Can reveal consensus and diversity of participants' needs, experiences, preferences, and assumptions

- Allows group interaction such that participants are able to build on each other's ideas and comments to provide an in-depth view not attainable from individual questioning
- Unexpected comments and new perspectives can be explored easily
- The rapport between the moderator and the group members can encourage participants to express their feelings fully and honestly

Disadvantages:

- Samples are typically small and may not be representative.
- All participants must be able to congregate in the same place at the same time, which is particularly difficult if the potential participants live in geographically distant regions.
- Can generate a large amount of qualitative data that is often difficult to analyse
- The information collected may be more likely biased by subjective interpretation than is the case with quantitative methods.
- More outspoken individuals can dominate the discussions. Viewpoints of less assertive people are often difficult to assess.
- Both the quality of the discussion and the usefulness of the information depend on the skill of the moderator. The moderator's job is to both encourage discussion and to maintain focus. Too much moderator control means you hear little of the participants' own perspectives. Too little moderator control means you hear less about the topic that interests you.

Guidelines:

- When designing a focus group, it is important to keep in mind the uses to which the findings will be put. Avoid asking questions that you won't be able to act on or incorporate into a community road safety education programme.
- When designing a focus group, keep in mind: who the participants are, how you will recruit them, what questions you will ask, how you will moderate the groups and collect data; and how you will analyse and report the data.
- Have a mix of general and more specific questions. If your questions are all general, you may not elicit detailed responses from the participants. On the other hand, if your questions are all specifically directed, you may neglect to address and receive information on the 'bigger picture'. Make sure to have a variety of follow-up 'probes' for each of your questions in the event that you need to clarify any questions or have participants elaborate on their responses.
- Choose a moderator who knows how to work with a group to encourage full participation and interaction among members.
- Select group members who represent the target population, and who are typically representative of people in the community (disaggregate by age, gender, income and occupation). Homogenous groups help to create a sense of comfort and compatibility among participants.
- Limit the group size to between six and twelve people. This size group allows everyone to participate, while providing enough diversity of opinion for a well-rounded perspective. Consider a smaller group when you need to obtain more depth and detail, or if participants are highly involved with a topic and have a lot to contribute.
- A person acting as an observer or recorder should record all comments made by the group (using an audio tape or video recorder is advised, but not essential) and note any significant gestures or behaviours, and verbatim remarks.

- Audio or video tapes are often the primary source for focus group data, however, this can add a significant element of cost (e.g. transcription) and effort (e.g. too much information to work with) that might not be necessary based on your needs assessment goals. If your needs assessment goals are simple and straightforward, it is likely that an analysis of the focus group on-site summaries will more than suffice. If you do decide to tape the focus group, keep in mind that these tapes contain data that are not in the transcript. For example, listening to or viewing the tape can show whether a statement was a joke, how lively a discussion was, or what was going on during a confusing exchange. Also bear in mind how culturally sensitive a community is and the appropriateness of using audio/video equipment. It is important to ask the groups approval to ask the groups approval to use such equipment.

Sample focus group discussion questions:

1. Can you tell me whether there have been any road traffic accidents in the community in the last year and what was the cause of them?

Probes:
Are road traffic accidents mainly caused by pedestrians or drivers and what are the reasons for this?

2. How do road traffic accidents affect poorer households?

Probes:
How do traffic accidents effect the household involved (i.e. loss of income, medical bills, funeral bills, taking children out of school to earn income – loss of education) and the community (i.e. cost of infrastructure repairs, cost to economy, cost to health service)?

3. In what ways could road safety be improved in the community?

Probes:
Are there any local community workers, adult or school groups that promote road safety, and what methods do they use?

4. Is there a road safety component in the local school curriculum, and how does it promote road safety?

Probes:
How can education materials used in schools be adapted for the wider community, and in particular for vulnerable groups who have not attended school (such as children, adults, infirm)?

References

Academy for Educational Development and Education Development Center (2004). www2.edc.org/NTP/focusgroups.htm

Krueger, R. A. and Casey, M. A. (2000). Focus groups: a practical guide for applied research. Sage Publications

4.4: KEY INFORMANT INTERVIEWS

"Guided interviews in which only the topics are predetermined and specific questions arise during the interview"

Semi-structured interviews

Interviewing key individuals is one of the main techniques used in development studies. Participatory methods have contributed to adjusting the interview to make it more conversational, while still controlled and structured, resulting in a semi-structured interview (SSI). In this technique, some of the questions and topics are predetermined, whilst the majority of questions will be formulated during the interview. Questions are asked according to a flexible checklist and not from a formal questionnaire. SSIs tend to be conducted alongside other exploratory and participatory techniques, and are used to complement the participatory survey methods with in-depth information. They often take time to prepare, and to conduct on a one to one basis, and therefore should be used in addition to the group survey methods, but are useful in extracting information from particular members of the community. A summary of four key interview methods is given in Table 4.9 (Davis, 2001).

Table 4.9: Different interview techniques

Type of interview	Characteristics	Strengths	Weaknesses
1. Informal conversational interview	Questions emerge from the immediate context and are asked in the natural course of things: there is no predetermination of question topics or wording	Increases the salience and relevance of questions; interviews are built on and emerge from observations: the interview can be matched to individuals and circumstances	Different information collected from different people with different questions. Less systematic and comprehensive if certain questions don't arise 'naturally'. Data organisation and analysis can be quite difficult. Requires maximum attention by interviewer
2. Interview guide approach	Topics and issues to be covered are specified in advance, in outline form; interviewer decides sequence and working of questions in the course of the interview	The outline increases the comprehensiveness of the data and makes data collection systematic for each respondent. Interviews remain fairly conversational and situational	Important and salient topics may be inadvertently omitted. Interviewer flexibility in wording questions can result in incomparability of responses
3. Standardised open-ended interview	The exact wording and sequence of questions are determined in advance. All interviewees are asked the same basic questions in the same order	Respondents answer the same questions, thus increasing comparability of responses. Reduces interviewer bias when several interviewers are used. Facilitates organisation and analysis of the data	Little flexibility in relating the interview to particular individuals and circumstances.

4. Closed quantitative interviews	Questions and response categories are determined in advance. Responses are fixed; respondent chooses from among these fixed responses	Data analysis is simple; responses can be directly compared and easily aggregated; many questions can be asked in a short time.	Respondents must fit their experience and feelings into the researcher's categories; may be perceived as impersonal, irrelevant and mechanistic. Can distort what respondents really mean or experienced

A checklist for obtaining information for CRSE programmes might include the following (note that this information is similar to that obtained by the focus group discussion):

- Where are the accident hotspots in the community?
- Who is usually involved in the accidents and why? (i.e. pedestrians, drivers, youths, elderly, school-going children, unemployed etc)
- Why do accidents take place? (i.e. dangerous road, poor safety engineering, bad driver/pedestrian behaviour, driver impairment - drink/drugs/fatigue etc)
- How can accidents be prevented in the future? (i.e. engineering and enforcement strategies, and education strategies – formal, classroom based; informal, community based)
- Remember! Use open-ended questions (Why? Where? How? When? What?) to generate discussion around the key issues in the checklist

Key Informants

Key informants comprise stakeholders and beneficiaries that are directly or indirectly affected by the risk of road traffic accidents and their consequences. They can be mobilised from individuals or groups at the macro level (expert knowledge), meso level (interest groups) or micro level (household information). A sample of potential key informants is listed below:

Macro level stakeholders	Meso level stakeholders	Micro level stakeholders
▪ Road safety officer ▪ Local police department ▪ Hospital administration ▪ National bureau of statistics (road traffic accident statistics) ▪ Government officials	▪ Primary/secondary school teachers ▪ Youth group co-ordinators ▪ Community associations/women's groups ▪ Road safety awareness campaigners	▪ Homeless ▪ Unemployed ▪ Women, children, elderly ▪ Infirm ▪ Non-school attending children/adults ▪ Village leaders

References

Davis, A. (ed.) (2001). Participatory rural appraisal. The Rural Transport Knowledge Base. Crowthorne: TRL Limited. www.transport-links.org/knowledgebase.htm

4.5: ACCIDENT RECORDING/DATA

"A road accident is a rare, random, multifactor event that is always preceded by a situation in which one or more road users have failed to cope with their environment, resulting in a vehicle collision." (ROSPA, 1992)

What are road accident data systems?

An accident database is needed for accurate assessment of the road safety situation. In order to be useful, the data need to cover more than deaths and should include data on casualties and the circumstances of the accident. This will help organisations that are able to contribute to safety improvement to devise and implement appropriate measures designed to combat specific problems. It will also allow the situation to be monitored to know whether or not the interventions are working. The main processes involved in producing an accident database include the following:

- Accident reporting and recording system
- Storage and retrieval system
- Analysis system
- Dissemination system.

Having introduced an effective database system, it is important to ensure that the data is utilised as effectively and widely as possible. Police annual accident statistic reports should be circulated widely and national decision makers should use the data. They should also be made readily accessible to relevant organisations for designing appropriate countermeasures, producing plans, monitoring effectiveness, and carrying out research (Asian Development Bank, 1998).

Road accident data systems in developing countries

Annual statistical reports are typically produced in developing countries, and while these contain useful background information, they often do not contain sufficient details for the identification of hazardous locations or detailed accident analysis (TRL, 1991). The most important source of data for diagnosing the crash road problem is the police road crash report. In the early 1970's, a survey of road crash information systems used in developing countries (Jacobs et al, 1975) indicated that only 15% of the countries had adequate crash report forms, and none had computer analysis facilities.

Most countries have a road accident recording system, invariably based on some form of legal obligation to report accidents, especially those involving fatalities or serious injuries, to the police. The police then complete an accident report. The amount of detail, the accuracy of reporting, the percentage of accidents recorded and their availability to non-police users varies enormously from country to country.

In order to improve their crash investigation and research capability in developing countries, TRL developed its Microcomputer Accident Analysis Package (MAAP), which is now used in over 50 countries. MAAP consists of two key components: a police report booklet or form with a recommended structure, and a set of software programs for data

entry and analysis. The relatively low cost and increased availability of microcomputers means that individual highway authorities can analyse their own data to help identify hazardous locations, the nature of the problems, choose appropriate countermeasures, and assess their effectiveness. See Figure 4.10 for a sample police report form, developed for use in a developing country (the name of the country has been removed).

Police records are, however, subject to error and omission, and furthermore may be inadequate for the needs of the safety analyst intent on designing remedial measures. Some progress has been made in the design of improved data capture techniques linked to computerised databases (MAAP), which are simple to use and helpful to the policemen in the field. By using graphic representation and simple 'tick-boxes', the Accident Report Form has been made much more user-friendly and, as a result, a more reliable source document which can pin-point both the location and the nature of an accident (TRL, 2001).

Road Safety Surveys

Police records of road accidents are the primary source of information on road safety. Traffic police are the most ideally placed to record and manage accident data. Police do, however, need to be motivated and convinced of the usefulness of devoting the considerable effort required to collect this data and they also need to have adequate resources in terms of staffing, training, and computer systems. The data collected for all recorded accidents need to answer the following questions:

- **Where** accidents occur?
- **When** accidents occur?
- **Who** and what vehicles were involved?
- **What** was the result of the collision?
- **What** were the environmental conditions?
- **How** did the collision occur?

To be of value it is essential that the accident report includes the following:

- An accurate geographic location of the accident using a location sketch
- Basic information describing the accident, its victims, and events leading up to the accident
- A collision sketch showing paths of the road users involved, and summary information regarding the highway at the accident location.

Road safety audits of locations and routes attempt to identify potential road hazards (and the need for remedial measures), based on the experiences of the auditor. Such surveys could be undertaken at the time of completing a road inventory, but require specialist knowledge (IHT, 1990). Their original development was specifically for new or rehabilitated roads as independent checks at the various stages of design and implementation, to try to ensure that new safety problems were not being constructed.

Identifying accident blackspots

Highway engineers and traffic police generally know of the tendency for road accidents to cluster together at certain hazardous locations, commonly termed accident 'blackspots' or 'hotspots'. The following list gives an indication of the information required in determining where road traffic accidents most commonly occur and why:

- **Accident density:** specific locations at which accidents occur most frequently, for example a sharp bend, or at road intersections. On lengths of road, it can be considered in terms of accidents per kilometre.
- **Traffic volume:** more traffic would be expected to lead to more accidents. If traffic flow data are available it can be helpful to compare sites in terms of accidents per unit of traffic (i.e. to control for 'exposure').
- **Accident severity:** accidents with fatal and serious injuries are more costly in both social and economic terms, so it is important to take account of this.

Accident data are the base measure of safety that is essential in order that politicians, planners, engineers, police, education and publicity specialists, and researchers can gain awareness of the scale and nature of safety problems over a road network. The data can be interpreted at different levels:

National level: the accident database should be used to help decision makers formulate national policy, such as wearing of seatbelts, rider helmets, age restrictions and other legislation.

District level: accident data can be used to target particular 'at risk' road user groups by means of, for example, drink driving publicity campaigns, school education programmes, driver and rider training and police enforcement campaigns.

Local level: accident data can be used to develop local action plans where the worst sites on the road network are identified and appropriate accident countermeasures designed and implemented.

References

IHT (1990). Guidelines for the safety audit of highways. London: The Institute of Highways and Transportation

Jacobs, G. Bardsley, M. N. and Sayer, I. (1975). Road accident data collection and analysis in developing countries. TRRL Report LR676. Crowthorne: Transport and Road Research Laboratory

ROSPA (1992). Road safety engineering manual. Birmingham: Royal Society for the Prevention of Accidents

TRL (1991). Towards safer roads in developing countries. Crowthorne: Transport Research Laboratory

TRL (2001). Rural transport safety strategy. The Rural Transport Knowledge Base. Crowthorne: TRL Limited. www.transport-links.org/knowledgebase.htm

Figure 4.10: Sample police report form

POLICE

ROAD CRASH REPORT

1. Police Ref No. | Accident Key / Date entered:

2. Police Station | 3. District

Number of Vehicles involved

Number of Casualties (killed or injured)

4. CRASH SEVERITY: 1. Fatal 2. Heavy injury 3. Light injury 4. Damage only

5. Date: Day / Month / Year

6. Day: 1. Sun 2. Mon 3. Tues 4. Weds 5. Thu 6. Fri 7. Sat.

7. Time (24 hr clock)

8. JUNCTION TYPE: 1. Not at junction 2. + 3. T 4. L 5. Y 6. O 7. ++ 8 Slip road 9 Private entrance

9. JUNCTION CONTROL: 1. Not at junction 2. Police officer 3. TrafficSignals 4. Stop sign 5. Give Way sign or marking 6. Uncontrolled

10. ROAD USER MOVEMENT CODE : Please Refer to Coding Sheet

11. MOVEMENT: 1. One Way Street 2. Two Way Street

12. WEATHER: 1. Fair 2. Rain 3. Fog 4. Smoke/Dust 5. Other

13. LIGHT CONDITION: 1. Daylight 2. Dawn/Dusk 3. Darkness

14. STREET LIGHT: 1. No street lights 2. Lights on 3. Lights off

15. ROAD CHARACTER: 1. Straight/Flat 2. Curve only 3. Incline Only 4. Curve+ Incline 5. Bridge

16. SURFACE TYPE: 1. Asphalt 2. Gravel 3. Earth

17. ROAD CONDITION: 1. Good 2. Damaged

18. SURFACE CONDITION: 1. Dry 2. Wet 3. Muddy 4. Flooded 5. Foreign matter

19. ROADWORKS: 1. No 2. Yes

20. HIT & RUN: 1. No 2. Yes

CRASH LOCATION

21. NAME OF CITY/TOWN/VILLAGE: .....

22.NAME OF ROAD: ..... *between* .....

23. Intersecting Rd/LANDMARK 1 .....

24. Intersecting Rd/ LANDMARK 2 .....

25. Distance ..... (M)

26. Distance ..... (M)

27. *FOR JUNCTION:* NAME OF SECOND ROAD .....

OFFICE USE ONLY 28. X= 29. Y= 30. ROUTE 31. KM 32. 100m

CRASH LOCATION MAP

Draw single line road map showing accident spot in relation to prominent landmarks such as bridges or Km posts. Mark distances to landmarks.

COLLISION DIAGRAM SKETCH

Mark the position and direction of each vehicle before collision and details of the road layout at accident spot.

33. REPORTING OFFICER: NAME ..... RANK ..... No.....

34. POLICE DESCRIPTION OF CRASH

.....

VEHICLE NO 1 1. REG NO:

2. Make & Model

3. VEHICLE TYPE: 1. Bicycle 2. Autocycle 3. Motorcycle 4. Car. 5. Pickup 6. 4x4 7. Minibus 8. Bus 9. Truck 10. Articulated Truck/bus 11. Cart

4.VEHICLE MANOEUVRE: 1. Right turn 2. Left turn 3. U turn 4. Cross traffic 5. Merging 6. Diverging 7. Overtaking 8. Going ahead 9. Reversing 10. Sudden start 11. Sudden stop 12. Parked OFF Road 13. Parked ON road 14. From Private Road 15. Other

5. LOADING: 1. Properly loaded 2. Overloaded 3. Insecure load 4. Protruding load 5. Other improper load

6. VEHICLE DEFECT: 1. None 2. Brakes 3. Steering 4. Tyres 5. Lights 6. Multiple 7. Other

7. VEHICLE DAMAGE: 1. None 2. Front 3. Rear 4. Right 5. Left 6. Roof 7. Windscreen 8. Multiple

8. OWNER: 1. Government 2. Diplomatic 3. Private 4. Company 5. Hire car 6. Taxi 7. Other

9. DRIVEN BY: 1. Owner 2. Employee 3. Borrowed 4. Stolen 5. Other

DRIVER 1 DRIVER'S NAME .....

10. LICENCE NO:

11. Type of Licence: 1. Full Licence 2. Provisional 3. International 4. No Licence

12. DRIVER SEX: 1. Male 2. Female

13. DRIVER AGE:

14. DRIVER ERROR: 1. None 2. Inattentive 3. Too fast 4. Too close 5. No signal 6. Bad overtaking 7. Bad turning 8. Didn't give way 9. Other

15. DRIVER INJURY: 1. Fatal 2. Serious injury 3. Minor injury 4. Uninjured

16. ALCOHOL: 1. Not suspected 2. Suspected 3. Tested positive

17. ALCOHOL LEVEL:

18. SEAT BELT/ HELMET WORN: 1 Yes 2 No

VEHICLE NO 2 1. REG NO:

2. Make & Model

3. VEHICLE TYPE: 1. Bicycle 2. Autocycle 3. Motorcycle 4. Car 5. Pickup 6. 4x4 7. Minibus 8. Bus 9. Truck 10. Articulated Truck/bus 11. Cart

4.VEHICLE MANOEUVRE: 1. Right turn 2. Left turn 3. U turn 4. Cross traffic 5. Merging 6. Diverging 7. Overtaking 8. Going ahead 9. Reversing 10. Sudden start 11. Sudden stop 12. Parked OFF Road 13. Parked ON road 14. From Private Road 15. Other

5. LOADING: 1. Properly loaded 2. Overloaded 3. Insecure load 4. Protruding load 5. Other improper load

6. VEHICLE DEFECT: 1. None 2. Brakes 3. Steering 4. Tyres 5. Lights 6. Multiple 7. Other

7. VEHICLE DAMAGE: 1. None 2. Front 3. Rear 4. Right 5. Left 6. Roof 7. Windscreen 8. Multiple

8. OWNER: 1. Government 2. Diplomatic 3. Private 4. Company 5. Hire car 6. Taxi 7. Other

9. DRIVEN BY: 1. Owner 2. Employee 3. Borrowed 4. Stolen 5. Other

DRIVER 2 DRIVER'S NAME .....

10. LICENCE NO:

11. Type of Licence: 1. Full Licence 2. Provisional 3. International 4. No Licence

12. DRIVER SEX: 1. Male 2. Female

13. DRIVER AGE:

14. DRIVER ERROR: 1. None 2. Inattentive 3. Too fast 4. Too close 5. No signal 6. Bad overtaking 7. Bad turning 8. Didn't give way 9. Other

15. DRIVER INJURY: 1. Fatal 2. Serious injury 3. Minor injury 4. Uninjured

16. ALCOHOL: 1. Not suspected 2. Suspected 3. Tested positive

17. ALCOHOL LEVEL:

18. SEAT BELT/ HELMET WORN: 1. Yes 2. No

PASSENGER CASUALTIES *Complete tables using codes from side and bottom panel*

NAME & ADDRESS	1 TYPE	2 Veh No	3 SEX	4 AGE	5 INJ'Y	6 POS'N	7 ACTION	8 BELTS Installed
1)	2							
2)	2							
3)	2							
4)	2							

5. INJURY: 1. Fatal 2. Heavy 3. Light

6. PASS'GER POSITION: 1. Front seat 2. Rear Seat 3. M/cycle pass 4. Bus pass 5.Back of Truck or Pickup

PEDESTRIAN CASUALTIES

NAME & ADDRESS	1 TYPE	2 HIT BY Veh No	3 SEX	4 AGE	5 INJ'Y	9 LOC'N	10 ACTION	11 ALC'OL
1)	3							
2)	3							
3)	3							

7. PASSENGER ACTION: 1. Sitting 2. Standing 3. Boarding 4. Alighting 5. Falling

8. SEAT BELT/ HELMET USED 1. Yes 2. No

9. PEDESTRIAN LOCATION: 1. On pedestrian crossing 2. Within 50m of Ped x-ing 3. On central refuge 4. In centre of road 5. On footpath/verge

10. PEDESTRIAN ACTION: 1. Standing 2. Crossing road 3. Walking along road 4. Walking along edge 5. Playing on road

11. ALCOHOL: 1 Not suspected 2. Suspected 3. Tested positive

4.6: ROADSIDE SURVEYS

"Surveys provide an inventory of baseline data on transport infrastructure and services, and an appraisal of road safety risk. They can help to pinpoint measures (technical, institutional and financial) for improving efficiency in transport network operations." (Fouracre, 2001)

Road user surveys in problem identification

Qualitative and participatory approaches of data collection are not by themselves sufficient in identifying the source of the road safety problem, or in devising appropriate countermeasures. Rather they are more suitable for the study of driver and pedestrian behaviours, in identifying where road safety 'hotspots' are located according to local knowledge, and establishing what problems the individual community consider most important. Quantitative surveys are better placed in the collection of baseline data that provides information on 'non-community' issues of the road network and transport characteristics, road user characteristics (drivers, operators and passengers) and of households located in the surrounding vicinity of high accident risk areas. Baseline surveys provide comparative data that can be used in pre- and post-intervention impact scenarios to test the effectiveness of any engineering and education countermeasures adopted. The following survey types are described below, giving their benefits and disbenefits in a broad road safety context, some of which may not be directly relevant to a CRSE programme:

- Transport surveys
- Demand/supply-side surveys
- Operator surveys
- Driver surveys
- Passenger surveys
- Household surveys
- Traffic counts
- Pedestrian surveys

Transport surveys are typically undertaken in order to identify how well current transport functions, the opportunities for transport development and the needs of, or demand for, transport that is expected over the foreseeable future. Variations on this general scheme include: monitoring the impacts (in its very widest interpretation) of transport and transport changes, monitoring how transport responds to both internal (e.g. regulatory change) and external (e.g. increased road charges) stimuli; and analysing changes to the organisational and institutional structures that support the transport sector.

Demand and supply surveys

There is a range of surveys available to the enquirer that can be grouped into two main categories that can provide supplementary information, which are:

- Supply surveys that describe the nature of the transport system, its scale and productivity, its bottlenecks and the scope for its development

- Demand surveys that describe the way in which transport is currently used, or which describe current user satisfaction or how users would prefer to be supplied with transport to meet their needs.

The supply-side surveys are likely to be quantitative in nature, focusing on the establishment of performance indicators, growth factors, costs, etc. Many surveys yield data that is directly input into analytical models, and some database models have been designed for storage and analysis of this information (e.g. MAAP, see Section 4.5).

Demand-side surveys are also likely to be quantitative in nature, but there will also be a much greater degree of qualitative information gathering that describes user needs and satisfaction. Indicators (e.g. accessibility measures) may assist in quantifying some of these qualitative attributes, but they are not absolute measures. Demand attributes and aspirations are also likely to be much more tied to context specific factors, and hence less easy to analyse by comparative techniques.

Operator Surveys are supply-side surveys using questionnaire based surveys applied to vehicle operators (persons running a passenger or goods transportation business), drivers of vehicles employed by a transportation business or farmers, or other businessmen who transport their goods and produce in their own vehicles (TRL, 2002).

Operators of both trucks and public transport can be interviewed to yield information that can be wide-ranging, covering:

- Vehicle productivity and costs
- Labour utilisation and costs
- Tariffs and fare structures
- Route structures
- Operating practices
- Organisational structures within the industry

Operators are likely to be a useful source of information concerning constraints on the provision of services to rural and isolated areas. They are also likely to have candid views on regulatory policy, as well as providing an insight on safety, vehicle design and maintenance.

Driver Surveys may yield a different perspective on operating practices from operator surveys. Drivers can also be a source of information on vehicle productivity and costs comparable to that derived from the vehicle operators, particularly in the case where the driver is hiring the vehicle. This source is particularly useful in the informal or non-corporate sector, where vehicle owners may keep few records of vehicle utilisation.

Passenger Surveys will obtain information about passengers travel and their satisfaction with service provision, including concerns about risk of accidents and driver behaviour. They can also be monitored to capture information on their waiting times, the loading patterns on vehicles, average travel distances, etc. In-vehicle surveys use observers (the number depending on the size of vehicle) who monitor numbers boarding and alighting at each stopping point along the vehicle journey. The same observers can also derive information on vehicle speeds by recording times of arrival at pre-determined timing points. By staying with one vehicle throughout the day, an observer can also determine information on the vehicle's utilisation, productivity and revenue earnings.

Household Surveys are used to establish the nature of travel, and the attributes (mainly socio-economic) of the household that influence their travel. Questionnaires can be used to identify demographic and household composition, household income and expenditure, travel patterns and transport service charges as a baseline for road safety behaviour and in determining the impact of engineering and education countermeasures and associated enforcement. The following is a list of issues that can be identified:

- Household composition and livelihood
- Household travel patterns
- Trip frequency, trip purpose, distance and cost
- Modal composition
- Marketing activities
- Proximity to the road, highway, bridge or other structure
- Nature of road accidents affecting household members
- Socio-economic impacts of road accidents on the household
- Ownership of capital assets

Household surveys can be used to develop demand-forecasting models based on these types of association with the frequency and nature of road accidents. These questionnaire surveys are more straightforward than those that are participatory, principally because they use pre-determined questions. The household (and transport operator questionnaires) are not complicated, but there are a few guidelines that will aid the selection of a survey team and conduct of the surveys:

- The questionnaires should be translated into the local language or dialect
- Enumerators should comprise of both men and women, to avoid biasing the sample
- Enumerators should have a minimum level of education. High school leavers or undergraduate students are ideal
- It is critical that enumerator's undertake training prior to the pre-impact surveys to ensure they are capable of recording information correctly and consistently
- Piloting of questionnaires aids the training of enumerators because it gives them 'on-the-job' experience.
- All survey questionnaires should be accompanied by guidelines which describe in detail how the questionnaires should be correctly completed

Traffic counts are conducted to record the level of use of a road, as well as to classify the vehicles by type, and to estimate vehicle occupancies (i.e. the average numbers of passengers carried by each vehicle type). Classification is particularly used to highlight the prevalence of road traffic accidents against vehicle type, and then to target the drivers, passengers and operators of high risk category vehicles with road safety education programmes. Traffic counts and speed surveys also establish the speed and

density of traffic volume in a given locality and in relation to residential and retail settlements, which gives an indication of potential risk factors relating to road safety. However, some of the more complicated 'counts' detailed below may not be necessary for CRSE programmes undertaken in rural communities.

Traffic counting can be undertaken manually, or more conveniently by automatic traffic counters. The latter can record and store information for long periods, before being read. Modern counters record information in electronic format that can be downloaded straight into customised traffic analysis software. Automatic counters are also capable of recording vehicle classifications, although the accuracy is generally poor. Vehicle occupancy counts must be undertaken manually.

The main output from a traffic count is a measure of average traffic flow, recorded as the total traffic passing in both directions over a 24 hour period or Annual Average Daily Traffic (AADT). For low volume roads the variability in traffic flow from day to day can be very high, and short counting periods can introduce high errors in estimates. Variability from seasonality (with the possibility of impassability in the rainy season), may be important. Adjustment factors for seasonal variation are usually difficult to estimate with any degree of accuracy.

The accuracy of traffic counts representing a 'true' average is improved as the count duration increases, when the count is undertaken in more than one period of the year, and on roads with higher traffic volumes. Improved accuracy can also be achieved by using local knowledge to determine whether there are days within the week or periods during the year when the flow of traffic is particularly high or low. Factors to look for include:

- Market days
- Religious days
- People travelling to and from urban areas for the weekend
- Wet weather affecting possible road use and desire to travel
- Increased traffic flows during harvest seasons

In determining AADT's it is also important to avoid counting on days when there is likely to be exceptionally high or low traffic, counting on these 'exceptional days' can have a significant impact on accuracy. Factors to look for include:

- National holidays
- Local holidays
- Strike days
- Closed borders

Traffic counts on low volume rural roads should also include pedestrians, bicycles and other non-motorised transport (NMTs). Local knowledge should also be used to pick appropriate locations for conducting the traffic counts to ensure a true reflection of the traffic using the road to avoid under or over counting. Factors to look for include:

- Avoid counting too close to towns and villages – except when establishing high accident risk locations
- Be aware of the location of junctions and the impact of these on traffic flows
- Pedestrians and NMT's may use local footpaths and tracks in addition to the road. When counting this type of traffic ensure that the count station is located to capture all traffic
- Rural people predominantly travel as the sun is rising and as the sun is setting

- When counting in the wet season have knowledge of local diversions on poor roads

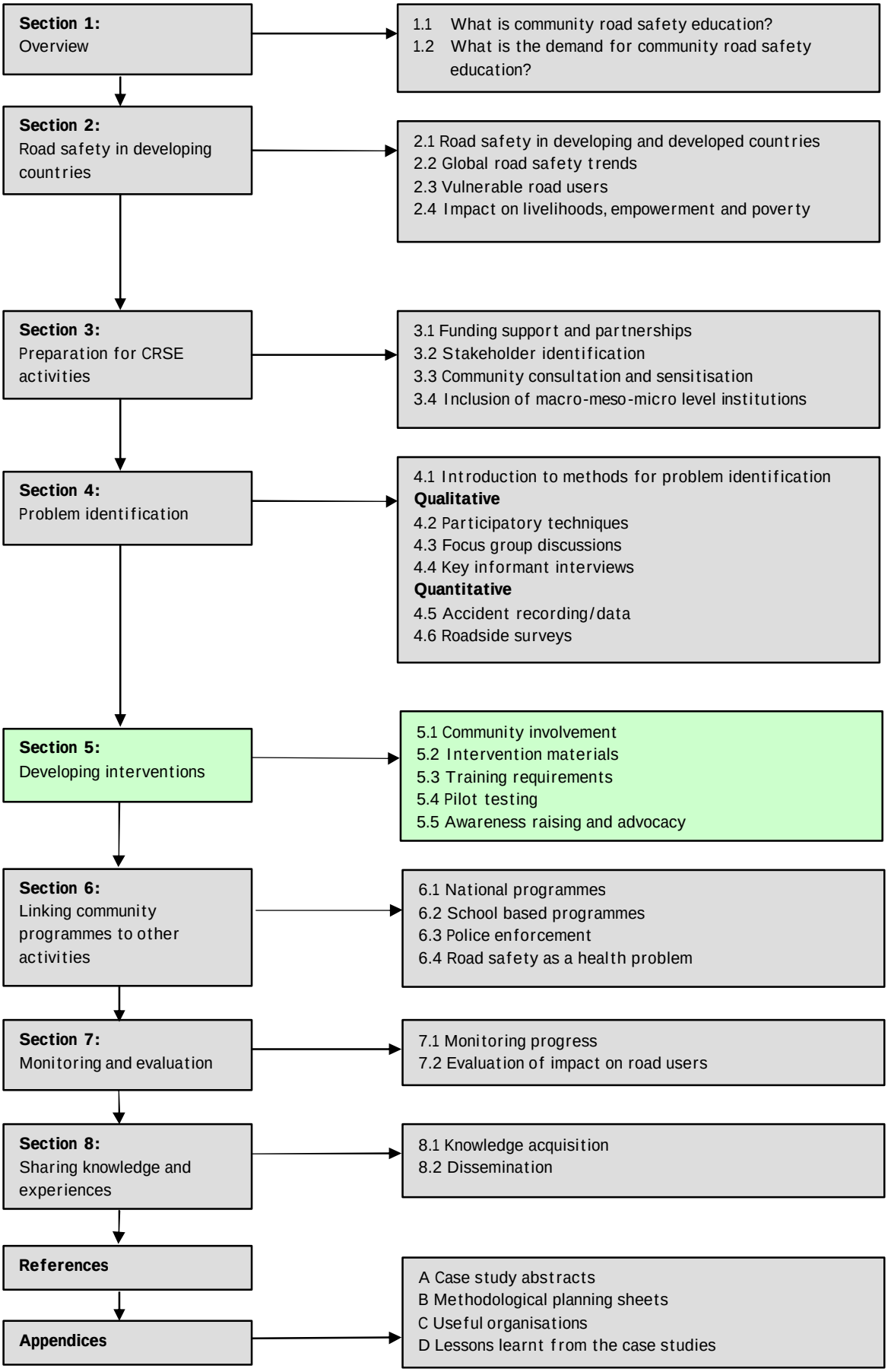
Lastly, it is important that feedback from the participatory exercises and quantitative questionnaires is provided for the community under survey before development of interventions begins. This is required to validate the data acquired from the community, and to enable them to contribute to the intervention development process. Feedback can be provided through participation in a forum that enables contribution from respondents (such as focus group discussions).

References

Fouracre, P. (2001). Rural transport survey techniques. The Rural Transport Knowledge Base. Crowthorne: TRL Limited. www.transport-links.org/knowledgebase.htm

TRL (2002). Rural transport operator surveys. The Policy Toolkit for Increased Rural Mobility. Crowthorne: TRL Limited. www.transport-links.org/policytoolkit.htm

Section 5: Developing Interventions


Section 1:
Overview
1.1 What is community road safety education?
1.2 What is the demand for community road safety education?
Section 2:
Road safety in developing countries
2.1 Road safety in developing and developed countries
2.2 Global road safety trends
2.3 Vulnerable road users
2.4 Impact on livelihoods, empowerment and poverty
Section 3:
Preparation for CRSE activities
3.1 Funding support and partnerships
3.2 Stakeholder identification
3.3 Community consultation and sensitisation
3.4 Inclusion of macro-meso-micro level institutions
Section 4:
Problem identification
4.1 Introduction to methods for problem identification
Qualitative
4.2 Participatory techniques
4.3 Focus group discussions
4.4 Key informant interviews
Quantitative
4.5 Accident recording/data
4.6 Roadside surveys
Section 5:
Developing interventions
5.1 Community involvement
5.2 Intervention materials
5.3 Training requirements
5.4 Pilot testing
5.5 Awareness raising and advocacy
Section 6:
Linking community programmes to other activities
6.1 National programmes
6.2 School based programmes
6.3 Police enforcement
6.4 Road safety as a health problem
Section 7:
Monitoring and evaluation
7.1 Monitoring progress
7.2 Evaluation of impact on road users
Section 8:
Sharing knowledge and experiences
8.1 Knowledge acquisition
8.2 Dissemination
References
Appendices
A Case study abstracts
B Methodological planning sheets
C Useful organisations
D Lessons learnt from the case studies

5.1: COMMUNITY INVOLVEMENT

"In order to overcome restraints on resources and to make full use of infrastructures, community involvement in planning and implementing road traffic quality and safety projects is vital." (Minister Mac Maharaj, South Africa, 1997)

Why is community involvement important?

Development is not about the delivery of 'goods' to a passive citizenry. It is about active involvement and growing empowerment. Community involvement in traffic safety issues is presently an important vehicle of change. In South Africa the following framework for facilitating community-driven traffic safety has been embraced:

> "Empowerment of people by enhancing their personal capacity and self-worth so that they can become aware of their potential to meet their needs through participation and ownership of the process of development" (Vermaak, 1998).

Community involvement is a requisite of any effective road safety education programme because it requires the interest and buy-in of all potential stakeholders and beneficiaries for the identification of local road safety problems and issues; and participation in the development and intervention of countermeasures to raise awareness of the issues and reduce the incidence of road traffic accidents.

A simple transfer of strategies and practices for road safety education from a developed to developing countries is likely to be ineffective due to variations in educational systems, teaching methods, traffic regulations and conditions, as well as exposure to risk. Hence a prerequisite of road safety education, whether formal or informal, is to research and develop teaching methods and materials in the country in which they will be used, prior to implementation.

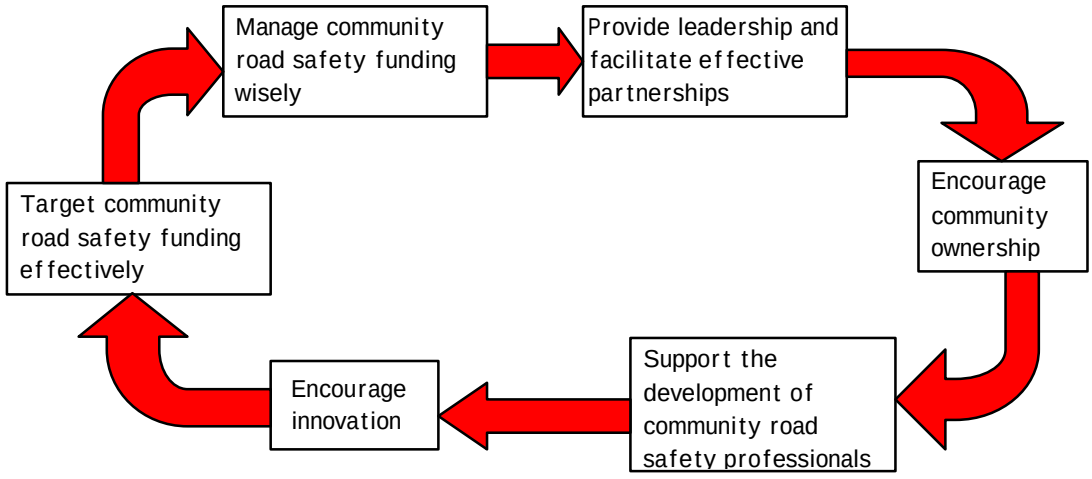
Inclusiveness

Community Road Safety Education programmes are prone to failure where conclusions are made about the road safety problem, and decisions made about potential solutions, without consulting the community who have the benefit of local knowledge, and are also required to adopt and use any countermeasures that are imposed upon them.

Community development for road safety is the process of identifying, and working with, and within, different communities of people to assist them with becoming aware of their own local road safety issues. Communities are supported in developing and implementing their own informed solutions to these issues, through planning and co-ordination, provision of accurate and relevant road safety information, and accessing funding.
The underpinning philosophy of CRSE programmes is that they:

- Encourage community ownership of both issue and solution, and thereby build confidence, capability and a positive, sustainable change in road safety attitudes and behaviour at the community level
- Provide the ability to involve particular communities that may be difficult to access by more conventional approaches
- Generate insights on local road safety issues and new ideas for road safety that can feed back into the overall road safety environment

- The whole community can be encouraged to support willing compliance with safety standards and rules



Source: New Zealand Land Transport Safety Authority (2003)

While inclusion of community representatives in the design and planning stages of CRSE programmes are deemed necessary, it should be noted that undertaking stakeholder consultation can be time-consuming and costly, and must therefore be included in the budget of the implementing agency. It should avoid reliance on donor support where funds can be sourced internally, so as to ensure sustainability of the programme in the long term.

Planning with the community

"An outsider who comes with ready-made solutions and advice is worse than useless. He must first understand from us what our questions are, and help us to articulate the questions better, and then help us find solutions" (Burkey, 1993).

Making contact and planning with the community is fully discussed Sections 3.3 and 4.2 respectively. The following checklist will help maintain enthusiasm and achieve the programme goals of the community group:

- Ensure the objective is reachable in a short period and will not overtax the group
- Create interim goals towards the objective so the group will experience success regularly
- Follow the planning cycle method (plan, action, evaluate)
- Anticipate and prepare the group for obstacles and problems
- Give credit for accomplishments and compliment people on achievements
- Turn the negative result of setbacks and failures into a positive learning experience

References

Burkey, S. (1993). People first: a guide to self-reliant, participatory rural development. London: Zed Books

New Zealand Land Transport Safety Authority (2003)
www.ltsa.govt.nz/crsp/community-rd-safe-strat-2003.html

Vermaak, L. (1998). Participatory road safety educational technologies (PET): a community driven approach. Proceedings of the South African Transport Conference. September 1998; Pretoria, South Africa

5.2: INTERVENTION MATERIALS

Community Road Safety Education programmes should comprise "a dialogical approach to learning, where both facilitator and learner are actively engaged in the learning process, in an atmosphere of mutual acceptance and trust. Education is seen as a process of communication and dialogue. This is a problem-posing approach that leads to action for change" (Vermaak, 1998)

What are intervention materials?

Intervention materials comprise the resources and equipment required to conduct a community road safety education programme in poor urban or rural communities. Typically, a cluster of intervention remedies are advocated – including those that involve the community – designed to reduce road traffic accidents. They can involve:

- **Engineering** techniques
- **Enforcement** measures
- **Education** programmes

Engineering techniques include, for example, pedestrian crossings, traffic calming measures and the segregation of different types of road user (TRL, 1991). Law enforcement measures include the use of radar speed 'guns' and cameras and (alcohol) breathalysers. Education programmes that are directed at drivers, parents and children, include formal education mechanisms, but also community based and mass media publicity campaigns which promote safer and more considerate road user behaviour. Conventional road safety education interventions, including those conducted in schools and as part of the national curriculum require more formal materials that can be used and adopted countrywide as part of a national road safety education programme.

Children's education

It is important for road users to be educated about road safety from as young an age as possible, with simple messages about the dangers of roads and traffic. In industrialised countries, a number of approaches have been tried, both through school systems and through parents, and most children receive some advice. However, in developing countries, where the child pedestrian accident problem is generally more serious, a study of children's crossing knowledge (Downing and Sayer, 1982) indicated that children were less likely to receive advice than in the United Kingdom from members of their family, teachers or the police. There is clearly a need to improve road safety education. However, since some countries have low school attendance figures, it is important that education through community programmes is considered as well as at school.

A number of studies in Europe have evaluated teaching environments for children crossing roads. Overall, the results demonstrated the importance of training on real roads. The need for frequent supervised practice on local roads close to where children live should be emphasised. Road safety education programmes should be graded and developmental. Trainers need guidelines on what and how to teach. To meet these requirements, many countries have produced syllabus documents and teacher guides (Leburu 1990, Sayer et al 1997). However, the transferability of industrialised country solutions to developing countries is uncertain in these areas.

How can intervention materials be used in CRSE programmes?

CRSE programmes that are implemented in the wider community need to be designed with specific beneficiaries in mind, and with consideration for special needs groups such as the very elderly, the physically and visually impaired, and illiterate community members. In addition, there are stakeholders in the community that have a key role in implementing road safety interventions, and these include school pupils and school leavers, teachers, community leaders, community based organisations and youth centre leaders. These stakeholder groups are sufficiently educated and known to other community members to be trained in conducting CRSE programmes, and in training vulnerable community members how to be more sensible road users, as both drivers and pedestrians.

The intervention methods

There are numerous ways of communicating with individuals and communities. The 'best' method – if there is one – will depend on many factors. Consideration needs to be given to existing circumstances and the community's prior experience. It is vital to take account of things such as literacy rates, work demands and the many different elements that constitute the target audience.

Naturally, there is likely to be a certain level of suspicion and reticence amongst community members to adopt CRSE programmes through the use of intervention materials, since they may not have experienced any form of 'teaching' before, and hence the community trainers themselves are fundamental in conducting the CRSE programme and in alleviating any concerns about what the programme contains.

Community trainers: educators of community road safety do not need to be restricted to teachers, but rather community members who are well respected by target beneficiaries and can relate to the road safety problems and experiences of the learners. Trainers might include (but are not limited to) elected local government officials (e.g. panchayat in India – see Appendix A1), community workers (such as NGOs – see Appendix A2), village 'Chiefs' (in countries such as South Africa – see Appendix A3), local police (although in some countries the police may not be respected by the community), religious institutions (road safety is already taught in many mosques), teachers, community youth (see Appendix A4), school leavers, parents and grandparents. However, there may be a cultural hierarchy, in which case it would not be appropriate for a school leaver to be a trainer of adult beneficiaries. The circumstances under which trainers are selected, and the learners who they will educate should be carefully considered prior to conducting the CRSE programme.

The community trainers should receive initial training by an expert on the particular road safety issue or source of traffic accidents in the locality, for example alcohol and drug abuse amongst pedestrians and drivers, lack of awareness of road safety

engineering measures (i.e. zebra and pelican crossings, pedestrian, bicycle and driver signing, etc), and road user behaviour amongst pedestrians, drivers and riders. Without accurate knowledge of the road safety problem and how to resolve it, the trainers will not be well-equipped to educate the learners.

The intervention materials

A wide range of materials can be developed for trainers to educate learners in a community environment that can be classified into two types:

- Literary materials – for literate learners
- Non-literary activities – for illiterate learners

Literary materials: comprising flip charts and brochures containing information on the road safety problem and cause of traffic accidents in the locality. A social awareness programme might include:

- Flip chart – used as an educational tool comprising words and/or pictures
- Bookmarks
- Banners
- Greetings cards
- Posters
- Essay, poetry and poster design competitions
- Pledge to road safety signed by learners and local authority representatives (councillors, village leaders etc)
- Brochures/leaflets
- Articles in magazines and newspapers

Non-literary activities: while posters, bookmarks and banners can be produced as visual aids with pictures for illiterate learners, there are other methods of educating road users through visual techniques including:

- Community theatre/drama - Forum Theatre is a theatrical game in which a problem is shown in an unsolved form, to which the audience are invited to suggest and enact solutions
- Fairs/processions
- Videos – road safety films can be produced for CRSE programme beneficiaries that raise particular issues of concern in the locality and demonstrate dangerous driver and pedestrian behaviour. If a 'local' video can be produced it can contain interviews with high profile community leaders to optimise impact on road users, otherwise more general videos can be purchased and used.

Dissemination Channels

The media: the mass media is a very powerful mechanism for increasing community awareness of road safety risks and adoption of preventative measures. Television, radio and newspapers have the benefit of reaching a wide audience and changing attitudes and behaviours amongst multiple communities. However, the media can be costly and may require sponsorship. It is also typicaly

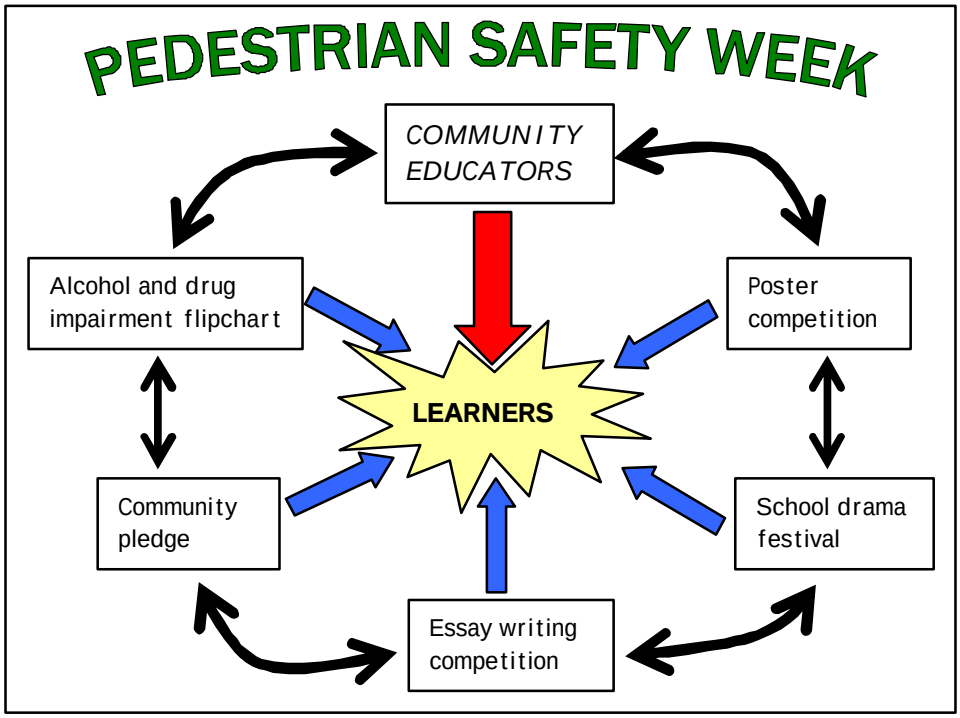
inaccessible to very poor and remote communities that do not have the infrastructure (electricity) or cannot afford the equipment (televisions and radios) to sustain road safety education through media channels.

Road safety events: safety days or safety weeks can be organised for target communities, as long as there is sufficient support and commitment from local government representatives, road safety officers (where these are in operation), school teachers and community based organisations. Such events would combine intervention materials and activities as listed above in a programme that maximises contribution by all community stakeholders and beneficiaries, and in particular to the most vulnerable groups.

Enforcement

Research in industrialised countries suggests that changes in traffic police operations need to be well-advertised to ensure maximum effect on road-user behaviour. This finding is likely to be universal, so it is therefore important that developing and emerging countries integrate changes in enforcement tactics with appropriate publicity campaigns (see also Section 6.3). In many countries, it is likely that such improvements will need to be accompanied by modification to both the traffic legislation and the ways of dealing with offenders. For example, Victoria in Australia is widely reported as having the greatest success in reducing drink driving. This has been reduced to about one third of its previous high level over a six-year period, and fatalities involving alcohol have been halved. This has been achieved through a combination of hard-hitting advertising campaigns and strict enforcement (including random breath testing) using a fleet of 'booze buses', as well as mobile breath test units in patrol cars.

Figure 5.1: Intervention materials used in Leroro, South Africa



The schematic diagram in Figure 5.1 demonstrates the relationship between the community educators and learners and the intervention materials employed in the South African town Leroro, where alcohol and drug impairment was identified as the key road safety issue for pedestrians and drivers (refer to Appendix A3 for an abstract of the South African case study).

Engineering, education and enforcement measures all remain requisites of any extensive road safety programme, however there is sufficient evidence to suggest that for low income settlements where the poor and illiterate are vulnerable to road traffic accidents, there is a need for a community approach to education strategies.

References

Downing, A. and Sayer, I. (1982). A preliminary study of children's road crossing knowledge in three developing countries. TRRL Supplementary Report 771. Crowthorne: Transport and Road Research Laboratory

Leburu, F. M. (1990). Training the Children: Traffic Education in Botswana. Proceedings of the International Conference for Road Safety and Accidents in Developing Countries. Cairo: The Academy of Scientific Research and Technology

Sayer, I. A. Palmer, C. J. Murray, G. and Guy, J. (1997). Improving road safety education in developing countries: Ghana. TRL Report 265. Crowthorne: Transport Research Laboratory

Stuart, N. S. and Maxwell, C. H. (1996) Mass Media Publicity as Support for Police Enforcement in Victoria. Proceedings of the 3rd World Conference on Injury Prevention and Control, Melbourne, Australia

TRL (1991). Towards safer roads in developing countries: a guide for planners and engineers. Crowthorne: Transport Research Laboratory

Vermaak, L. (1998). Participatory road safety educational technologies (PET): a community driven approach. Proceedings of the South African Transport Conference. September 1998; Pretoria, South Africa

5.3: TRAINING REQUIREMENTS

"Do not assume others know what you know; recognise the need to be trained and supported"

Why is training required?

In planning a community road safety education (CRSE) programme, and identifying key stakeholders that will assist in implementing the programme, training of programme implementers (e.g. school teachers, school leavers and community development workers) is a necessary step in the community driven road safety approach. Stakeholders that are responsible for imparting road safety education within the community may require training to suit the needs of the programme, and in understanding the intervention materials so that the beneficiaries can be taught effectively.

It is recommended that community road safety educators have a minimum level of education in order for them to fully comprehend the road safety problems at issue in their community, as well as the material that they will deliver to the community. It is also helpful if the educators are in a position of authority or popularity in the community, such that participants of the CRSE programme will respect their trainer, take the training seriously and adhere to the road safety advice given to them. If there is mistrust between the educator and community, the CRSE programme will be less effective and road safety advice ignored.

Training of trainers

The training content depends largely on the local road safety issue (e.g. driver impairment, use of engineering intervention, driver and pedestrian behaviour, comprehension of road signs and highway code, etc), and the intervention materials that have been devised for educating the community. The list below gives an indication of the content required in training of trainers that will provide participants with factual information relating to the road safety issue, along with good/best practice examples of road use, and most importantly training on how to use the intervention materials and associated approaches, such as participatory techniques.

Curriculum for Training of Trainers Programme

- Orientation on CRSE programme objectives
- Road vocabulary
- Road classification
- Traffic signs and signals
- Best practices for pedestrians, drivers, passengers and two wheelers
- Road safety related laws
- Community road safety initiatives and role of NGO's and community based organisations (CBO's)
- Road safety education, information and publicity
- Moral ethics and responsibilities of road use
- Concepts and methodology of participatory approaches and tools

The trainers will be given responsibility for conducting the CRSE programme, along with any associated road safety days utilised in the programme, hence it is paramount that the information they transfer to the community groups being trained is factual, correct and optimises opportunities for uptake of the intervention materials. For this reason,

the educators should be tested in their training capabilities before community training begins, and should be rewarded for their involvement in the programme. Note that the educators should be informed of the nature of the reward before their training begins, to ensure that the process of conducting the programme is sufficiently transparent and that they receive appropriate remuneration for their time.

Training of road users

Research shows that practical training methods, in which road users receive guided experience of solving traffic problems in realistic traffic situations, are amongst the most effective in improving pedestrian and driver competence. However, practical training is both time consuming and labour intensive, making it difficult to capitalise on the strengths of the method. A solution to this problem is adopting a community participation approach in which local volunteers carry out all roadside training, working in co-operation with local schools and community based organisations (DETR, 2001).

The principal advantage of practical training methods is that they lead to measurable changes in *actual* behaviour of pedestrians and drivers. This stands in contrast to more traditional educational methods concerned with knowledge acquisition, where changes in behavour following training have seldom been reported (Rothengatter, 1981).

Certainly for vulnerable community groups with high rates of illiteracy, practical training is the most effective method of teaching good road user behaviour in a participatory manner (sharing experiences and learning lessons). Such training could incorporate the following, but should be tailored to suit the specific needs of the communities in which the CRSE programme is being implemented.

Curriculum for Training of Road Users

- Orientation of course and its materials (Flip Chart)
- Road vocabulary, facilities of safe road use (engineering interventions)
- Traffic mix: motorised, non-motorised
- Traffic signs
- Correct road use
- Crossing road (do's and don'ts)
- Causes of road traffic accidents
- Travelling by vehicles – good practice
- What to do in the event of an accident?
- Review of the discussion, feedback, learning and sharing of experiences
- Courtesy and road manners

References

DETR (2001). Community approach to road safety education. London: Department of the Environment, Transport and the Regions

Rothengatter, J. (1981). Traffic safety education for young children. Lisse: Swets and Reitlinger

5.4: PILOT TESTING

"Ensure that the materials and methods work before widespread implementation."

What is pilot testing?

Piloting serves as a test or trial before implementation and roll out of community road safety education programmes. While it marginally adds to the costs of a programme, it is an effective way of ensuring that the stakeholder beneficiaries are responsive to the programme, particularly the intervention materials, and most importantly that the programme is effective in reducing the incidence of road traffic accidents.

Why is pilot testing necessary?

Testing is done to:

- Test effectiveness of the intervention materials
- Ensure acceptance of the programmes or interventions by the local community
- Discover any sensitive issues that may prohibit uptake of the intervention

In the conduct of conventional surveys, piloting of questionnaires and participatory techniques is critical prior to undertaking a full impact survey (Oksenberg et al, 1991). Questionnaires are typically pre-tested by the enumerators who will conduct the surveys so that they fully understand the guidelines that are supplied to them, and how to complete the questionnaires (Presser and Blair, 1994).

For CRSE programmes the same principles apply. Implementing intervention materials and undertaking enforcement, monitoring and evaluation of such programmes can be costly, and without initial testing of the programme components, the application of such a programme in 'live' conditions may prove ineffective. Piloting allows rigorous testing of the interventions and identification of problems with implementation or local information that has been neglected from the intervention materials (Schwarz and Sudman, 1995). Some advantages and disadvantages of pilot testing are:

Advantages

- Provides practical training for the community educators
- Tests the validity of the intervention materials
- Identifies areas of the programme that need attention before roll out
- Prevents wasteful expenditure on large scale programmes
- Strengthens the CRSE programmes for better performance

Disadvantages

- Increases the cost of implementing the CRSE programme
- Requires significant time inputs for conducting a pilot test
- To test the impact on the incidence of RTA's, sufficient time between pilot testing and implementation is required
- Piloting may result in the redesign, modification or even abandonment of the programme

How do you pilot test?

Pilot testing can be undertaken with a selected sample from the community that will receive the full CRSE programme. Alternatively, piloting can be carried out in a different community that shares the same demographic and socio-economic

characteristics, as well as road safety issues, in order to be as representative of the target community as possible (ASA, 1997).

The advantages of undertaking pilot testing outside the target community is that it will avoid what is sometimes called 'survey fatigue', which may arise if the pilot testing is carried out among the actual beneficiaries of the CRSE. It is necessary for the local communities to 'buy in' to the programme so that co-operation and understanding is adopted by all stakeholders. For this reason, piloting should ideally be undertaken away from the target settlement to avoid repeatedly disrupting the community. In addition, the intervention materials may lose their impact if the beneficiaries have already seen and tested them in advance of roll out.

However, there are also issues with undertaking pilot testing in a settlement other than the one that will receive the full CRSE programme, notably that the extractive nature of testing is unavoidable, and that the test respondents may question how they will actually benefit from the piloting. Therefore, if pilot testing is undertaken in a 'test' community, some form of incentive should be provided for those involved, agreed to by the community leader, to ensure that they benefit from the exercise.

The optimum condition for pilot testing might be to select a small group from the community that comprise vulnerable households with socio-economic characteristics similar to the target beneficiaries for which the programme will be aimed at, and hence the road safety conditions in the community will be accurately reflected. Nevertheless, there is no blueprint approach to pilot testing, and the approach adopted should be approved by the road safety officer, with necessary permissions from community leaders. However, it is recommended that concept testing be undertaken with *some* of the target audience, to obtain their feedback before making modifications to the CRSE programme and rolling out it out.

In the implementation of intervention materials, while participatory approaches cannot, in principle, be 'tested' per se, it is useful to practise some participatory exercises to determine how receptive participants are to visual tools, including community theatre (refer to Section 4.2 and 5.2).

References

ASA (1997). How to conduct pretesting: section on survey research methods. *Alexandria: American Statistical Association*

Oksenberg, L. Cannell, C. and Kalton, G. (1991). New strategies for pretesting survey questions. *Journal of Official Statistics, 7 (3), 349-365*

Presser, S. and Blair, J. (1994). Survey pretesting: do different methods produce different results? *Sociological Methodology 24*

Schwarz, N. and Sudman, S. (eds.) (1995). Answering questions: methodology for determining cognitive and communicative processes in survey research. *San Francisco: Jossey-Bass Publishers*

5.5: AWARENESS RAISING AND ADVOCACY

"Practitioners should be advocates of their own advice: they should practice what they preach, learn from what they find in their research and incorporate it into the way they work" (IFRTD, 1999)

Awareness raising and advocacy is fundamental for the sustainability of CRSE programmes. Community programmes are typically tailored to suit the needs of individual communities or a localised cluster of settlements that share the same or similar road safety problems. They are rarely implemented on a national scale, except when legislation is introduced that is enforceable countrywide (such as seatbelt use or drink driving regulations). For this reason, it is imperative that the lessons learned from good (and poor) practice cases are disseminated widely, and that the road safety issues, and measures to resolve them are widely advocated by road safety practitioners amongst influential decision makers in the national, and even international arena. After all, a programme that proves successful in one community, may well be feasible in another community, district or country.

There are various approaches for disseminating the outcomes of road safety campaigns that are described in Section 8.2, but guidance on using the knowledge and experiences of CRSE programmes to promote 'best' practice methods (in terms of the programme or campaign itself, and measuring the impact on road traffic accident reduction) is outlined below, and is further discussed in Section 7 on monitoring and evaluation.

Laying the foundations for success

- When trying to influence specific audiences, it may be useful to use intermediary institutions to lobby your actual target audience (for example, using road safety groups with established reputations to influence policymakers).
- The media can be a useful tool in building 'background' noise in support of your cause, so that when you do reach your target audience with specific messages and recommendations, they are already familiar with the subject and themes within it.
- It will be necessary to raise the profile and capacity and reputation of the instruments of influence (i.e. the institutions who will be doing the actual advocacy work).
- In order to bring about effective changes in the policies and practices of policymakers, you need to fully understand the policy context and be seen by policymakers to have this understanding.
- Influencing today's policymakers doesn't necessarily guarantee road safety awareness in practice, particularly for the future; you need to reach tomorrow's

policymakers through training centres, education facilities and schools to make them sensitive to the issues now.

- When trying to change the way individual road users behave, show them how much they have already achieved in improving their own and their neighbours behaviour as drivers and pedestrians – then point out how much more effective they could be by incorporating your recommendations/guidelines.
- The most influential tool you have for changing the way people work and think is evidence! Make sure all aspects of CRSE programmes (practical as well as advocacy) are monitored and disaggregated information collected on an ongoing basis to demonstrate actual impact on the incidence of road traffic accidents. You should then be able to assess the impact of current strategies regularly and share this information with others.
- Think about your own individual capacity and potential to bring about change. Once you've audited this and started to be an advocate, talk about what you do as a way of inspiring others to take their own personal commitment to bring about change.
- Look for a niche for your information: i.e. find out what other people are doing and what information would be useful to them and try to fit your advice so that it meets their needs (that way, your ideas are more likely to be taken up with enthusiasm).
- Audit what you already know and disseminate it to others so that they may use it in their own advocacy work.

Toolkit for effective advocacy: the ABC of advocacy

When trying to convince other people of your way of thinking, it's useful to divide them into the ABCs and decide on the best way of approaching each group separately:

A is for Advocates: people who are already convinced of the issues and who are actively influencing others and generating evidence with which to convince them. You need to learn some of the tricks and techniques used by this group of people, who probably have much more experience of advocacy than you, and you need to share any evidence you have which could support their advocacy work as part of a broad movement for change.

B is for Benign: this group of people are neither for nor against what you are trying to do. They probably agree with the theory of what you are trying to do – in this case reducing the incidence of road traffic accidents through community education and changing road user behaviour – but have never been sufficiently convinced of how this can be done. The majority of people working in the road safety sectors probably lie in this middle group, and the potential for engaging their co-operation and turning them into advocates themselves is enormous. You need evidence and instruction to show them how to integrate vulnerable groups (women, the young and elderly, and infirm) more effectively into CRSE programmes, and you need to understand under what constraints they live and what sorts of support they need to be able to change the way that they currently use the roads (either as drivers, passengers or pedestrians).

C is for Cannot Change: a group of people who have decided that they don't agree with your central argument, and they cannot see any reason to change the way that they currently work. In the minority, this group is extremely difficult to engage in debate and even more difficult to persuade to change. An awful lot of time can be spent getting nowhere with this group unless they include individuals who are actively critical to the

success of your broader campaign; it might be necessary to disregard their opinion – but do not alienate them in case they decide to work against you.

Factors critical to the success of any advocacy strategy

Time: those whom you're trying to influence may have full time jobs or undertake subsistence activities (such as farming) on a full time basis, and are not able or willing to give you either all of their attention or unlimited time to make your case. You need to research how and when they need the sort of information you have to communicate, and deliver it appropriately.

Credibility: there are some people whose advice you more readily accept either because of who they are (i.e. you have known them a long time and their advice has been good in the past) or what they know (they are well-placed with good sources of information on hand). If you are not regarded as credible with the people you're trying to convince, then pass on what you know to someone who can deliver your message who IS credible i.e. community association leaders, religious leaders, local teachers etc.

Frequency: sometimes you need to communicate the same basic message in a range of different but consistent ways over and over again in order for it to be heard. Repeating yourself is unlikely to do much damage – except make people avoid you – and could result in the message finally 'getting home'.

Language: use the sorts of words and expressions that your audience will understand and which they normally use in their own communication. For example, use scientific evidence if you're trying to convince scientists.

Money: sometimes the people you're trying to get to work in a different way – for example, to encourage road safety officers to use community based, participatory approaches in road safety campaigns – cannot afford to take your ideas on board because they would cost more money than has been budgeted. In this case, it might be worth trying to secure funds to 'bolt on' to the project in order that they can incorporate your ideas and can prove that this approach is more effective in meeting road safety requirements and in imparting road safety knowledge.

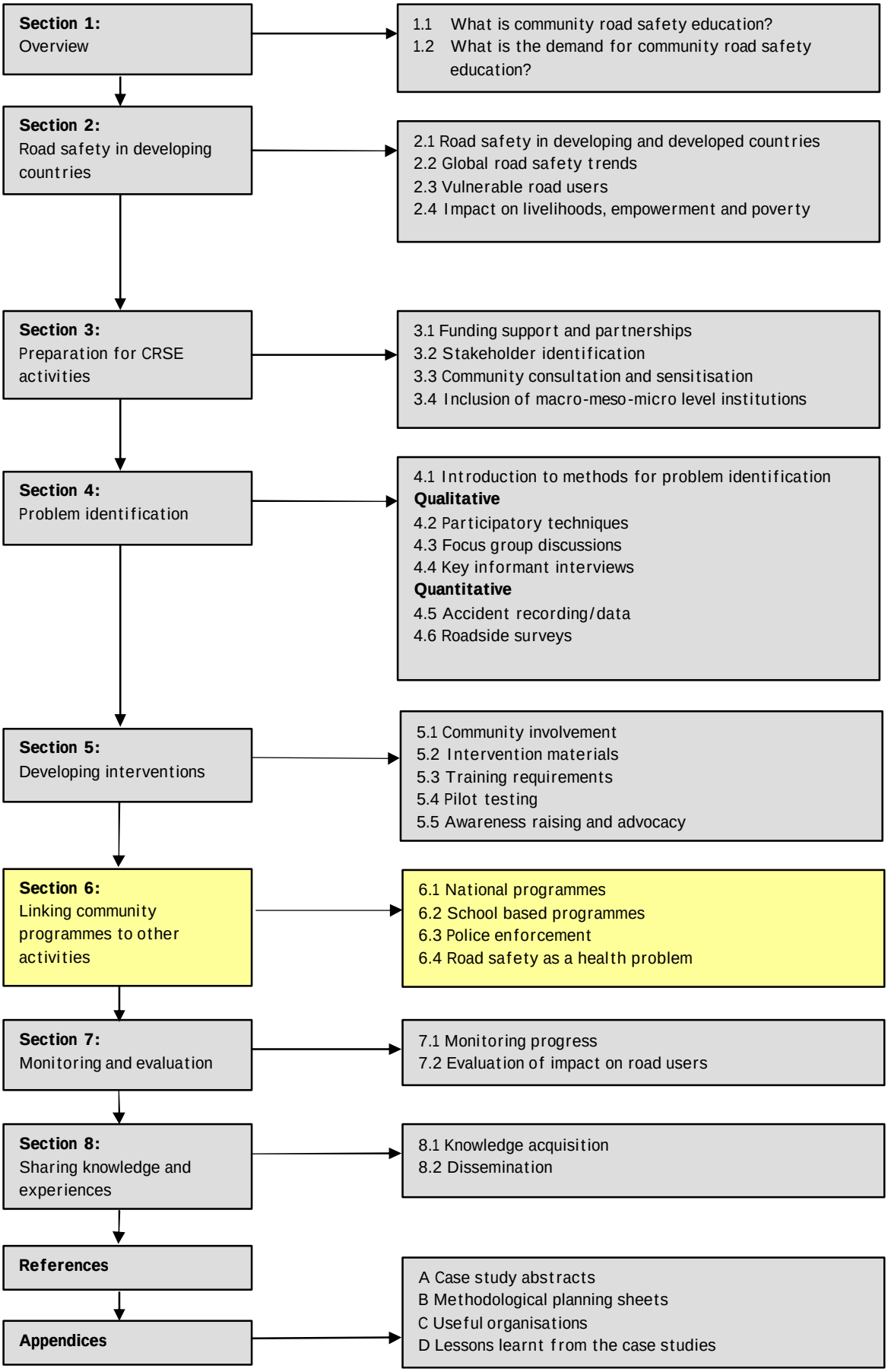
Evidence: your opinion or instinct or articulate words are never going to be as convincing as evidence. Build up a portfolio of evidence which proves the points that you're trying to make. Try to make them relevant, current, accurate and credible.

No choice: people can be influenced to change the way that they work if you do all of the above, and if you're lucky and are in the right place at the right time. But they have to change the way that they work if their organisation, or line manager, or donor requires it. Sometimes it is worth 'leap-frogging' the person you're actually trying to influence in order to bring about changes in the organisation's culture or procedures or planning, monitoring and evaluation systems to force them to change the way that they work (IFRTD, 1999).

References

IFRTD (1999). Balancing the load. Proceedings of the Asia and Africa Regional Seminars on Gender and Rural Transport. June and July 1999

Section 6: Linking Community Programmes to other Activities


Section 1:
Overview
1.1 What is community road safety education?
1.2 What is the demand for community road safety education?
Section 2:
Road safety in developing countries
2.1 Road safety in developing and developed countries
2.2 Global road safety trends
2.3 Vulnerable road users
2.4 Impact on livelihoods, empowerment and poverty
Section 3:
Preparation for CRSE activities
3.1 Funding support and partnerships
3.2 Stakeholder identification
3.3 Community consultation and sensitisation
3.4 Inclusion of macro-meso-micro level institutions
Section 4:
Problem identification
4.1 Introduction to methods for problem identification
Qualitative
4.2 Participatory techniques
4.3 Focus group discussions
4.4 Key informant interviews
Quantitative
4.5 Accident recording/data
4.6 Roadside surveys
Section 5:
Developing interventions
5.1 Community involvement
5.2 Intervention materials
5.3 Training requirements
5.4 Pilot testing
5.5 Awareness raising and advocacy
Section 6:
Linking community programmes to other activities
6.1 National programmes
6.2 School based programmes
6.3 Police enforcement
6.4 Road safety as a health problem
Section 7:
Monitoring and evaluation
7.1 Monitoring progress
7.2 Evaluation of impact on road users
Section 8:
Sharing knowledge and experiences
8.1 Knowledge acquisition
8.2 Dissemination
References
Appendices
A Case study abstracts
B Methodological planning sheets
C Useful organisations
D Lessons learnt from the case studies

6.1: NATIONAL PROGRAMMES

"…to improve road safety you have to start at the source…" (J Grove, Safety Congress, 1997)

Establishing CRSE programmes nationally

All countries tend to have some form of programme in place to promote road safety. However, these programmes may receive limited funding and progress may also be hampered because it may not always be clear where the ultimate responsibility for road safety lies (Aeron-Thomas et al, 2002). Also, it is often the case that in many developing countries 'Education' measures may not receive as much support or emphasis as the other 2 'E's' of safety (Engineering and Enforcement).

While most countries recognise the need to make road improvements at particularly hazardous locations (accident 'hotspots' or 'blackspots' - TRL, 1991) and have systems in place to make sure that vehicles are roadworthy (although with different degrees of success) and also have rules about testing drivers before they receive a licence (however this actually operates in practice), there is often inadequate attention paid to educating road users, of all ages, about how to behave safely when in traffic.

Given a worsening global road safety problem this means that there is an increasing need to provide national road safety education programmes for both children and adults. However, in many countries coordinated programmes are often lacking and, even if in place, may not be effective. The problem is further exacerbated by the rapidly changing transport environments (with the rapid increase in motorised vehicles) as well as the migration of the rural population to urban areas where they encounter a very different environment to that with which they are familiar.

While many countries do have some road safety education taking place in schools it is often limited in scope (Downing and Sayer, 1982) and does not take full account of establised 'good practice' (see TRL's Overseas Road Note 17, 1987). Also, very importantly, no account may be taken of the fact that not all children go to school, and that the majority of older road users may have left school without ever experiencing any adequate road safety instruction. While national 'mass media' campaigns can be developed to overcome such problems, they frequently rely on broadcasting messages on TV and radio which means that they often do not reach the people – at the community level - most in need of the information. Ideally there is a need for national school based programmes (see Section 6.2) as well as 'mass media' publicity/education programmes - both supported at the local level by community based programmes.

The advantages of this approach, if done correctly, is that it can identify which problems are most urgent and use the type of interventions that will be most effective. Given limited budgets they may be the only programmes that are practicable.

While, at the moment, the use of community based road safety programmes is relatively new – especially in developing countries – when they have been introduced (for example, see the four case study reports in the Appendices) they have been found to be effective and well supported. In some cases their popularity has created problems with

neighbouring communities wanting to be involved in similar projects. However, implementing successful 'trial' projects in a small number of communities is some way from having such programmes accepted, implemented and monitored nationally. Although this remains a considerable challenge it is likely that community programmes and involvement will grow in popularity around the world. This trend can be recognised in more developed countries (Cairney, 2000) and this needs to be quickly recognised by safety practitioners in developing countries. It is hoped that these guidelines will encourage this development.

References

Aeron-Thomas, A. Downing, A. J. Jacobs, G. D. Fletcher, J. P. Selby, T. Silcock, D. T. (2002). Review of road safety management practice. TRL Project Report, PR/INT/216/2002. Crowthorne: TRL Limited

Cairney, P. (2000). Current status of community road safety in Australia and New Zealand. ARRB Transport Research

Downing, A. J. and Sayer, I. A. (1982). A preliminary study of children's road crossing knowledge in three developing countries. TRRL Supplementary Report 771. Crowthorne: Transport Research Laboratory

TRL (1991). Towards safer roads in developing countries: a guide for planners and engineers. Crowthorne: Transport Research Laboratory

TRL (1997). Overseas road note 17: road safety education in developing countries – guidelines for good practice in primary schools. Crowthorne: TRL Limited

6.2: SCHOOL BASED PROGRAMMES

"If road safety education could be introduced into primary schools in Uganda it would be the single most important contribution to road safety ever seen in this country." (Justin Okat, Chairman National Road Safety Council, 2000)

Having road safety education in national curriculum

While in developed countries road safety education (RSE) is recognised as an important life skill and therefore deserving of being taught in schools, this is still not the case in many developing countries (Downing and Sayer, 1982). One consequence of this is that the proportion of children who are road accident victims in developing countries is around twice that of the proportion in developed countries (see Section 2.3). The problem is compounded by parents who do not appreciate their important role in teaching children about road safety; or perhaps not knowing what they should be teaching their children because they have never been taught themselves.

While those with a responsibility for developing an agreed national curriculum will recognise the need for having road safety taught in schools they often have considerable pressures to include more subjects or topics than can fit within the timetable. This means that teachers are often under considerable pressure to deliver road safety as 'extra curricular'. If they have received little training in teaching road safety themselves, and have limited resources available it may be viewed as low priority – and it is unlikely that many parents will complain about the quality of the road safety education their children are receiving.

Good practice and principles

The underlying objective of teaching children to be safer road users is to develop their:

- Knowledge and understanding of traffic and road risk
- The behavioural skills necessary to survive in the presence of traffic
- Knowledge of the causes and consequences of road accidents
- A responsible attitude to their own safety and to the safety of others
- Understanding of their responsibilities required by the rules that influence road traffic

The extensive body of research chiefly conducted in more developed countries (Rottengatter, 1984; Thompson, 1991; Harland et al, 1991) has identified a number of key elements with respect to teaching children to be safe road users.

Ideally RSE programmes should begin at the pre-school level and should continue throughout the child's school life. They should be based on practical training in a realistic road environment and use teaching methods which follow the principles of child development (for example, under the age of 6, children cannot imagine themselves in

someone else's position, and under 11 they find it difficult to only focus on what is relevant). Also, the training needs to be regular and frequent and thus should have a formal place in the school curriculum. Ideally, school programmes should be reinforced by community safety schemes.

These 'guidelines' have been summarised as the 5 'Ps' of RSE (see TRL's Overseas Road Note 17), which suggest it should:

- Begin **p**re-school
- Be **p**ractical
- Follow **p**rinciples of child development
- Be **p**resented frequently
- Have a **p**lace in the school time-table

While each of these are important, it is especially vital that courses and materials must be progressive and designed to take account of the developmental age of the children for which it is intended, the social and cultural context and the child's traffic environment. The programmes must include effective training for the teachers who will be using the materials in the classroom. Finally, the programme must persuade senior education administrators and curriculum development authorities to make road safety a continuous and sustainable educational subject. Ideally, the achievement of these items should be both tested and supported by objective evaluation of the new programme.

Appropriate and sustainable programmes

TRL's overseas RSE programme is rooted in both past and on-going research on child development and road safety conducted in more developed countries, (Molen, 1981; Rottengatter, 1981; DETR, 1999a, 1999b). Nevertheless, TRL recognises that what works in one country is not necessarily transferable, or even relevant, in another country. This means that RSE needs to be tailored for each country to take account of the education system in place, the peoples' beliefs, customs and way of life, the local traffic environment and, if it is to be sustainable, the available financial resources and administrative support.

Key elements in making the programmes appropriate and sustainable include:

- Identifying and involving local stakeholders among the officials administering education, police, health services, roads and transport policy
- Preparing a program adapted to the cognitive development of children that can be delivered within the local school curriculum
- Implementing a plan involving and training teachers and/or police, health workers and community activists, etc
- Monitoring and evaluation of the programme to improve, update and identify lessons learnt

Some examples of materials

Although materials have to be produced to suit local conditions, it might be useful to learn from existing resource materials such as those produced by, for example, TRL with the support of the UK's ODA (now DFID) aid programmes. These include:

- 'Safe Ways' developed for use in Ghana (Sayer et al, 1997) for the use of teachers of children aged around 10 and 11 – the final year of primary education
- A 'Teaching the Teachers' guide on how to use Safe Ways
- 'Good Practice Guidelines' (TRL Overseas Road Note 17), which include recommendations for administrators and policy makers on how to establish sustainable and effective systems
- 'Safe Feet' developed in India in the State of Maharashtra (Sayer et al, 2000) designed for use by teachers of children, aged about six, their first year of primary education

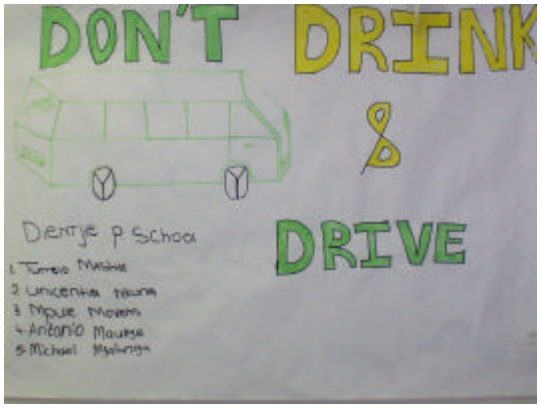
Key elements of school based programmes

Although developed for use in different countries and for different ages of children, there are a few key elements common to developing and using school-based RSE materials. For example:

- Available accident information and surveys of children's' knowledge should be used to help understand the problem
- The resources were based on combining accepted European 'good practice' with the local culture, transport, political and educational situation; it is not appropriate to merely translate western materials and use them in developing countries
- They have at their core learning by practical experience near (though not necessarily on) roads
- They all are in the form of manuals for the teachers as opposed to materials directed solely at the pupils
- The teacher materials are a series of clearly set out lessons with consistent presentation in the style of curriculum materials of their particular countries
- The style of the training is an interactive 'joyful learning' process; avoiding the didactic approach where the teacher talks and the child listens
- The main research projects included evaluation and monitoring as part of the development process.

Carrier subjects

It should be noted that the recent trend in delivering RSE in the classroom has been to deliver the materials as part of 'carrier' subjects, such as Social Studies or Life Skills and not to have road safety as a separate subject. As a result the concept of road safety can be part of the broader curriculum (such as science, geography, mathematics, etc) which means that is is more embedded (and reinforced) in the learning experience.



Pre-school and after school/youth clubs

While RSE should be started in pre-school (by parents and other carers) – that is, outside the curriculum – there is also considerable scope to use the school environment, without using formal classroom teaching, to promote road safety as part of activities after school or using lunchtime clubs and groups (e.g. Scouts, etc).

Child-to-Child

Child-to-child education is also becoming increasingly recognised as being an important way of passing information to children. The Safe Ways programme reported earlier used this approach (as well as the child-to-parent channel) but it needs to be recognised that children should not be given responsibilities (e.g. for teaching safe crossing behaviour) above their capabilities. There is information on child-to-child education on the Child-to-Child Trust website (www.child-to-child.org).

References

DETR (1999a). On the safe side – a good practice guide to road safety education in primary schools. London: The Department of the Environment, Transport and the Regions

DETR (1999b). On the safe side – a good practice guide to road safety education in secondary schools. London, The Department of the Environment, Transport and the Regions

Downing, A. J. and Sayer, I. A. (1982). A preliminary study of children's road-crossing knowledge in three developing countries. TRRL Supplementary Report 771, Transport Research Laboratory, Crowthorne

Ghee, C. Silcock, D. Astrop, A. and Jacobs, G. (1997), Socio-economic aspects of road accidents in developing countries. TRL Report 247. Crowthorne: Transport Research Laboratory

Harland, D. G. Murray, G. and Tucker, S. (1991). Road safety education: making safe connections. In Safety 91 Papers on Vehicle Safety, Traffic Safety and Road User Safety Research. Crowthorne: Transport Research Laboratory

Molen, H. H. (1981). Child pedestrian's exposure, accidents and behaviour. Accident Analysis and Prevention, 13, 193-224

Rothengatter, T. (1981). Traffic safety education for young children. Lisse: Swets and Reitlinger

Rothengatter, T. (1984). A behavioural approach to improving traffic behaviour of young children. Ergonomics, 27, 147-160

Sayer, I. A. Palmer, C. J. Murray, G. and Guy, J. (1997). Improving road safety education in developing countries: Ghana. TRL Report 265. Crowthorne: Transport Research Laboratory

Sayer, I. A. Quimby, A. Murray, G. and Guy, J. (2000). Improving road safety education in developing countries: India. TRL Report 442. Crowthorne: Transport Research Laboratory

Thomson, J. A. (1991). The facts about child pedestrian accidents. London: Cassell

TRL (1997). Overseas road note 17: road safety education in developing countries – guidelines for good practice in primary schools. Crowthorne: TRL Limited

6.3: POLICE ENFORCEMENT

"In most developing countries the traffic police are grossly under-resourced and under-trained to deal effectively with road safety violations. Effective traffic law enforcement can play an important role in reducing traffic crashes." (World Bank, 2002)

The need for enforcement

It is widely accepted that many traffic 'accidents' are complex events that may have a number of contributory factors. These may involve aspects of the road user, the vehicle or the road environment. For example, the driver may be driving too fast, or be drunk; the vehicle may have defective brakes or suffer from a tyre 'blow out' when travelling at speed; or the driver may cause an accident by suddenly swerving to avoiding a pot-hole in the road, or be driving in heavy rain that reduces the ability to see clearly, or stop the vehicle in an emergency.

For this reason it is recognised that a large number of road safety initiatives are possible. A popular distinction is to consider measures that involve either engineering (of the road or vehicle), education (of children in schools, or of the general public by mass media publicity campaigns) or enforcement. While there is evidence to support all these measures there is a widespraed recognition that enforcement has a very sizeable role to play in promoting road safety (Gaber and Yerrel, 1983). In some cases, enforcement activity will also be used as an important element to support education and engineering programmes. For this reason community interventions should take account of the benefits of accompanying enforcement programmes and the involvement of local police. The police (whether traffic or civil) sometimes feel that the public are antagonistic towards them and therefore can be very supportive, and helpful, in any programme that places them inside their community. In the very least, the local police need to be informed and invited to contribute towards programmes that concern them - unless it is considered that this will alienate members of the target community.

There are many forms of enforcement activity. In developing countries there is a growing trend towards automatic enforcement using 'camera' technology to detect speeding motorists or those who jump red traffic signals, however camera detection requires the back-up of an adequate driver and vehicle licencing database. Some countries supplement fixed speed cameras by having mobile equipment that they will use either openly (i.e. in full view, perhaps even with a warning sign before the measurement point), or covertly from unmarked vehicles. These may be supplemented by mobile patrols who can follow and stop motorists who are speeding or driving dangerously. In many countries they have 'random breath testing' for drivers over the legal alcohol limit where the police set up a check-point and breathalyse passing drivers.

It is recognised in most countries that enforcement activity should be highly visible and designed to "deter the majority rather than catch the few" (Mercer, 1985). However, in developing countries enforcement is typically more limited and is often 'static' in nature, often comprising routine checks to determine whether drivers have a genuine licence and insurance. While such activity can only help to improve safety it is not necessarily the most effective way of using police time and resources to promote safety. Of all the organisations involved, the police will have their role most clearly, and often legally, defined as they will be responsible for enforcing traffic regulations.

Enforcement through education programmes

In may instances road users do not obey traffic laws and regulations because they do not know them. Yet, even when people know the rules they do not obey them. While public education programmes are important in informing the general public – especially if new laws and regulations are introduced – enforcement is important if some level of compliance is to be achieved. There is no point in introducing safety legislation if no attempt is made to inform the public about the law and introducing a programme aimed at obtaining some minimal level of compliance. However, the traffic police often focus on facilitating vehicle flows rather than, for example, the safety of pedestrians and other vulnerable road users.

In this respect it should be recognised that not all enforcement should involve punishment. Some enforcement activity can be aimed at offering positive feedback, or reward, or offering education and courses in improved driving, rather than a fine.

Community road safety policing

While traffic safety is rarely a very high police priority in most developing countries, for many local communities, it can be a major concern in the daily lives of roadside communities who are regularly exposed to the threat of road accidents. Such concern over road danger can be seen in many developing countries by the construction of unauthorised speed humps – which, if not signed or built properly, can increase rather than reduce the risk of a road crash.

Also, a lack of confidence in the justice system is believed to contribute to the extensive under-reporting of accidents and the threat and custom of mob justice after a crash, which is prevalent in a number of developing countries.

Community participation in traffic law enforcement

Community participation in traffic law enforcement has been classified into four main types:

- Consultation
- Volunteering

- Partnership
- Advocacy

The amount of effort and independence of these methods vary.

Consultation is limited to helping the traffic police do a better job by providing them with information. However, even this would be a major step in promoting community traffic safety as it would allow police to be pro-active and not wait for accidents before conducting intervention (e.g. visiting a school, place of worship or community centre to talk about safety), or trying to improve locations that they view to be hazardous. It is worth noting that safety practitioners have two ways of identifying 'hazardous locations'. One is to look at available accident data, the other (and often best) is to simply ask the police or emergency service.

Volunteering and partnership efforts involve more time and commitment from the community, but can be largely guided by the police.

Some cities (for example in India – see Appendix A1) have 'local' traffic action committees, with community volunteers assisting children to cross the road - as well as high-technology patrol vehicles ('Interceptors') manned by both civilian employees and traffic police. In Bangladesh, community traffic policing projects have been promoted whereby local wardens help maintain traffic order, as well as discouraging criminal activities (see Appendix A2). In South Africa, community traffic safety forums are being promoted by the Department of Transport that include community traffic policing forums and other related projects (see Appendix A3).

One issue that both community policing and other community programmes should become more aware of is the need to provide road traffic victims with more support. For example, the Drive Alive programme in South Africa has produced information booklets for the benefit of road accident victims who are often overlooked in road safety projects.

References

Gaber, M. and Yerrel, J. (1983). Road safety in Egypt. In IAATM 9th International Conference. International Association for Accidents and Traffic Medicine

Mercer, C. (1985). The relationship driving while impaired charges, police drink driving, road-check activity, media coverage and alcohol related casualty traffic accidents. Accident Analysis and Prevention, 17 (6)

World Bank (2002). Road Safety. www.worldbank.org/transport/roads/safety.htm

6.4: ROAD SAFETY AS A HEALTH PROBLEM

"Traffic accidents are one of the greatest, perhaps *the* greatest of the nation's public health problems." (John F Kennedy, US President 1960-63)

Road safety a major health problem?

Wordwide over one million people are reportedly killed each year in road crashes, equivalent to three deaths every minute. A recent World Health Organization report (WHO, 2004) estimated that by the year 2020 road accidents will be the third leading cause of 'disability adjusted life years' (DALY) – putting road safety well ahead of wars, HIV/AIDS, malaria and (other) 'acts of violence' as a world health problem (see Figure 6.1). Currently, a number of hospital based surveys in developing countries have found that traffic accidents make up a very high proportion of the people being treated at accident and emergency departments and occupying hospital beds. In 2004 the World Health Organization nominated world health day to be a 'road safety day'.

Figure 6.1: Change in rank order of DALYs for the 10 leading causes of the global burden of disease

	1990		2020
Rank	Disease or injury	Rank	Disease or injury
1	Lower respiratory infections	1	Ischaemic heart disease
2	Diarrhoeal diseases	2	Unipolar major depression
3	Perinatal conditions	3	Road traffic injuries
4	Unipolar major depression	4	Cerebrovascular disease
5	Ischaemic heart disease	5	Chronic obstructive pulmonary disease
6	Cerebrovascular disease	6	Lower respiratory infections
7	Tuberculosis	7	Tuberculosis
8	Measles	8	War
9	Road traffic injuries	9	Diarrhoeal diseases
10	Congenital abnormalities	10	HIV

DALY: Disability-adjusted life year. A health-gap measure that combines information on the number of years lost from premature death with the loss of health from disability (WHO, 2004)

The cause of injuries worldwide is dominated by those incurred in road crashes. According to WHO data, deaths from road traffic injuries account for around 25% of all deaths from injury. Estimates of the annual number of road deaths vary considerably, as a result of the limitations of injury data collection and analysis, problems of underreporting and differences in interpretation. The figure ranges from around 750,000 (probably an underestimate, since it is made on the basis of 1998 data) to 1,180,000 annually – representing over 3,000 lives lost daily. Around 85% of all global road deaths, 90% of the disability-adjusted life years lost due to crashes, and 96% of all children killed worldwide as a result of road traffic injuries occur in low-income and middle-income countries. Over 50% of deaths are among young adults in the age range of 15–44 years. Among both children aged 5–14 years, and young people aged 15–29 years, road traffic injuries are the second-leading cause of death worldwide (WHO, 2004).

In low-income countries and regions – in Africa, Asia, the Caribbean and Latin America – the majority of road deaths are among pedestrians, passengers, cyclists, users of motorised two-wheelers, and occupants of buses and minibuses. Globally, the risk of dying in a road crash is far higher for vulnerable road users – pedestrians, cyclists and motorcyclists – than for car occupants.

Traditionally, road traffic safety has been assumed to be the responsibility of the transport sector, although the main focus within this sector has typically been limited to building infrastructure and managing traffic growth.

However, it is only in recent years that road safety is being treated as a serious 'health' problem. Perhaps the common usage of the word (traffic) 'accidents' – suggesting that they are events of chance, rather than typically being caused by deliberate actions (such as crossing the road away from a safe crossing point, driving too fast or driving after drinking alcohol) – should be replaced by 'crash'.

Public health has an important role to play. These include (see Figure 6.2):

- Discovering, through injury surveillance and surveys, as much as possible about all aspects of road crash injury – by systematically collecting data on the magnitude, scope, characteristics and consequences of road traffic crashes
- Researching the *causes* of traffic crashes and injuries, and in doing so trying to determine:
    - causes and correlates of road crash injury
    - factors that increase or decrease risk
    - factors that might be modifiable through interventions
- Exploring ways to prevent and reduce the severity of injuries in road crashes – by designing, implementing, monitoring and evaluating appropriate interventions
- Helping to implement, across a range of settings, interventions that appear promising, especially in the area of human behaviour, disseminating information on the outcomes, and evaluating the cost-effectiveness of these programmes
- Working to persuade policy-makers and decision-makers of the necessity to address injuries in general as a major issue, and of the importance of adopting improved approaches to road traffic safety
- Translating effective science-based information into policies and practices that protect pedestrians, cyclists and the occupants of vehicles
- Promoting capacity building in all these areas, particularly in the gathering of information and in research.

Figure 6.2: Road traffic injury as a public health problem (WHO, 2004)

Community health education has been applied in developing countries for many years and health education is promoted as an important component of primary healthcare, yet evaluations of its effectiveness typically focus on changes in knowledge rather than measurable impact on health. Exchange (a networking and learning programme on health communication) defines health communication as:

> "A process for partnership and participation that is based on two-way dialogue, where there is an interactive interchange of information, ideas, techniques and knowledge between senders and receivers of information on an equal footing, leading to improved understanding, shared knowledge, greater consensus and identification of possible effective action."

For years, health communication has focused on the channels used to convey information and good health practice to health workers, patients and community members. The World Bank's Social Capital Thematic Group advocates the use of social networks to promote better health education, particularly in the support of prevention efforts.

Health education techniques are multifarious, and while organisations that promote health communication (such as The Communication Initiative, the African Medical and Research Foundation (AMREF) and The Child-to-Child Trust) far exceed those that advocate community road safety education, none can claim to provide a universal remedy for dissemination of health education. What they can do is provide valuable lessons for other sectors, including literacy programmes and agriculture communication, as well as road safety education to adults and children that do not attend school. Exchange is currently working to map ways in which people are documenting and sharing lessons learned in health communication activities, and such information and the process in which it is collected and evaluated will prove invaluable to other sectors attempting to communicate influential messages to the poor.

The following list provides a selection of health communication resources including guides and manuals from which the research on community road safety education can learn lessons in the appropriate dissemination of information to a largely uneducated or under-educated audience:

- Wates, N. (1999). The community planning handbook. London: Earthscan
- The National Cancer Institute: Making health communications work: a planner's guide. http://rex.nci.nih.gov/NCI_Pub_interface/HCPW/HOME.HTM
- AMREF. (1998). Health project management guide: participatory project planning, project implementation and evaluation. Revised edition. Nairobi: AMREF
- Nyamwaya, D. and Akumu, P. (1986). A guide to health education in water and sanitation programmes. Nairobi: AMREF
- Planning and strategy models at the Communication Initiative website: www.comminit.com/planning_models.html

Road safety problems represent a very significant domestic, social and economic problem and one that can ill be afforded, especially in developing countries where resources are scarce and cannot be wasted on preventable 'accidents'. Also, as well as causing short term 'health' problems, road accidents can cause injuries that need long periods of rehabilitation as well as permanent disabilities.

References

AMREF. (1998). Health project management guide: participatory project planning, project implementation and evaluation. Revised edition. Nairobi: AMREF. www.amref.org

The Child-to-Child Trust: www.child-to-child.org

The Communication Initiative: www.comminit.com

Exchange: a networking and learning programme on health communication: www.healthcomms.org

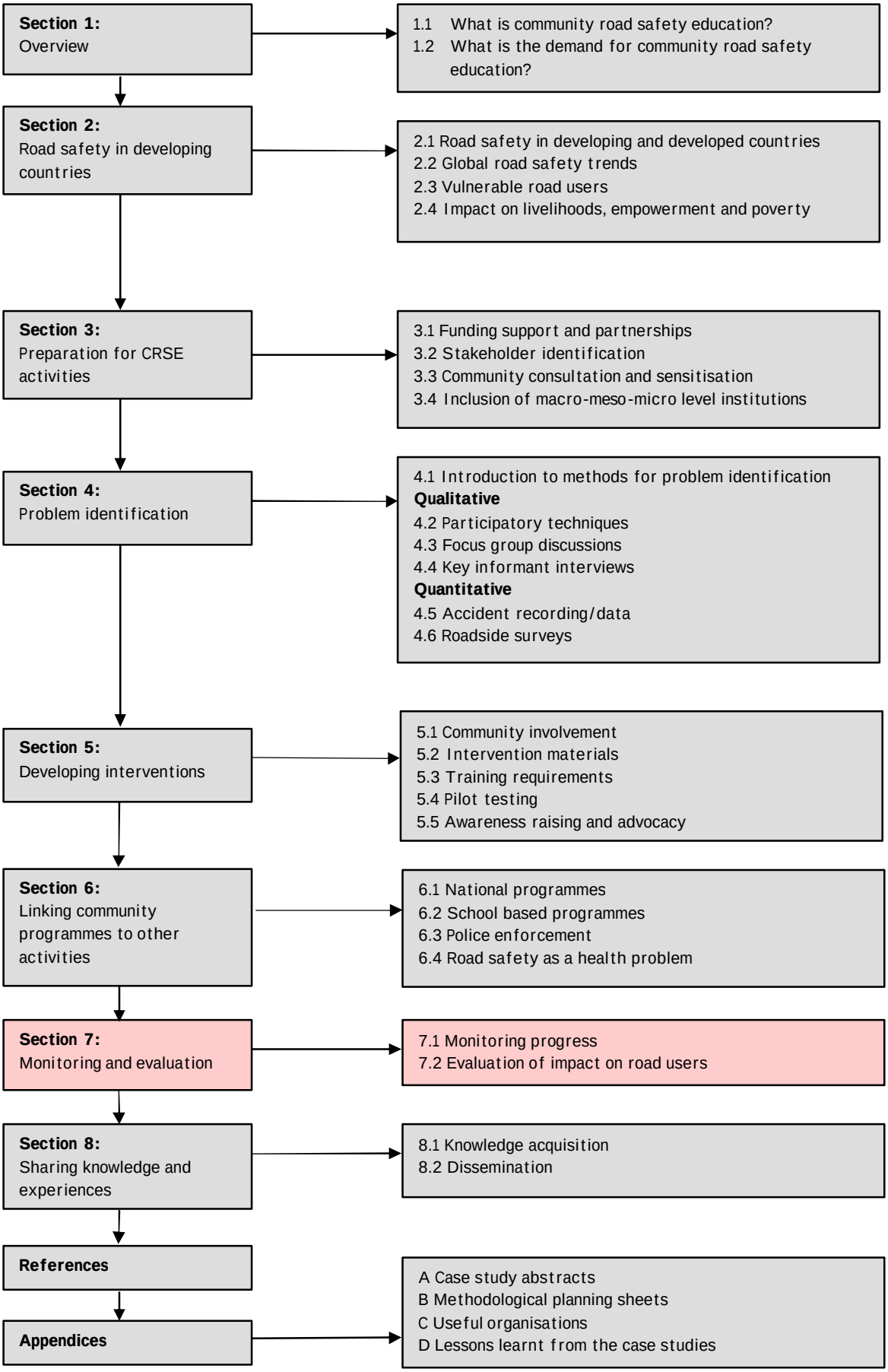
Nyamwaya, D. and Akumu, P. (1986). A guide to health education in water and sanitation programmes. Nairobi: AMREF

Wates, N. (1999). The community planning handbook. London: Earthscan

WHO (2004). World report on road traffic injury prevention. Washington D.C: World Bank

World Health Organization: www.who.int

Section 7: Monitoring and Evaluation


Section 1:
Overview
1.1 What is community road safety education?
1.2 What is the demand for community road safety education?
Section 2:
Road safety in developing countries
2.1 Road safety in developing and developed countries
2.2 Global road safety trends
2.3 Vulnerable road users
2.4 Impact on livelihoods, empowerment and poverty
Section 3:
Preparation for CRSE activities
3.1 Funding support and partnerships
3.2 Stakeholder identification
3.3 Community consultation and sensitisation
3.4 Inclusion of macro-meso-micro level institutions
Section 4:
Problem identification
4.1 Introduction to methods for problem identification
Qualitative
4.2 Participatory techniques
4.3 Focus group discussions
4.4 Key informant interviews
Quantitative
4.5 Accident recording/data
4.6 Roadside surveys
Section 5:
Developing interventions
5.1 Community involvement
5.2 Intervention materials
5.3 Training requirements
5.4 Pilot testing
5.5 Awareness raising and advocacy
Section 6:
Linking community programmes to other activities
6.1 National programmes
6.2 School based programmes
6.3 Police enforcement
6.4 Road safety as a health problem
Section 7:
Monitoring and evaluation
7.1 Monitoring progress
7.2 Evaluation of impact on road users
Section 8:
Sharing knowledge and experiences
8.1 Knowledge acquisition
8.2 Dissemination
References
Appendices
A Case study abstracts
B Methodological planning sheets
C Useful organisations
D Lessons learnt from the case studies

7.1: MONITORING PROGRESS

"Monitoring involves the collection of data on the process of a development intervention while it is being undertaken" (Hussein, 2000)

What is monitoring?

Monitoring can be defined as a continuing process that aims primarily to provide the management and main stakeholders of an ongoing intervention with early indications of progress (or lack thereof) in achieving the desired results.

Monitoring can also serve to identify - and thus help to rectify – any problems with an ongoing programme. If something is going wrong, and a solution exists to put it right, then changes should be made as soon as practicable – not when it is too late.

Monitoring of a programme needs to be closely aligned with the evaluation of a project. Evaluation is an important monitoring tool and monitoring is an important input to evaluation.

Why is there a need to monitor?

However much thought and preparation is given to designing intervention programmes they are invariably imperfect as people, communities and circumstances are unpredictable and different – and also change over time. For this reason it is necessary to monitor progress in order to identify whether things are going well or badly; and what problems can be identified that need to addressed. Thus it is good practice (if not essential) to monitor schemes both during and after they have been implemented - and to include a proper evaluation as an integral part of the scheme itself.

While monitoring can be either short-term (for example, by conducting observation surveys during the early weeks of a schemes introduction) or long-term (after, say, a number of months) a properly conducted evaluation might start before any of the scheme has actually been put in place. Section 7.2 focusses on the evaluation process.

However, if even low key monitoring suggests that problems exist there needs to be sufficient flexibility within the project to take rapid action.

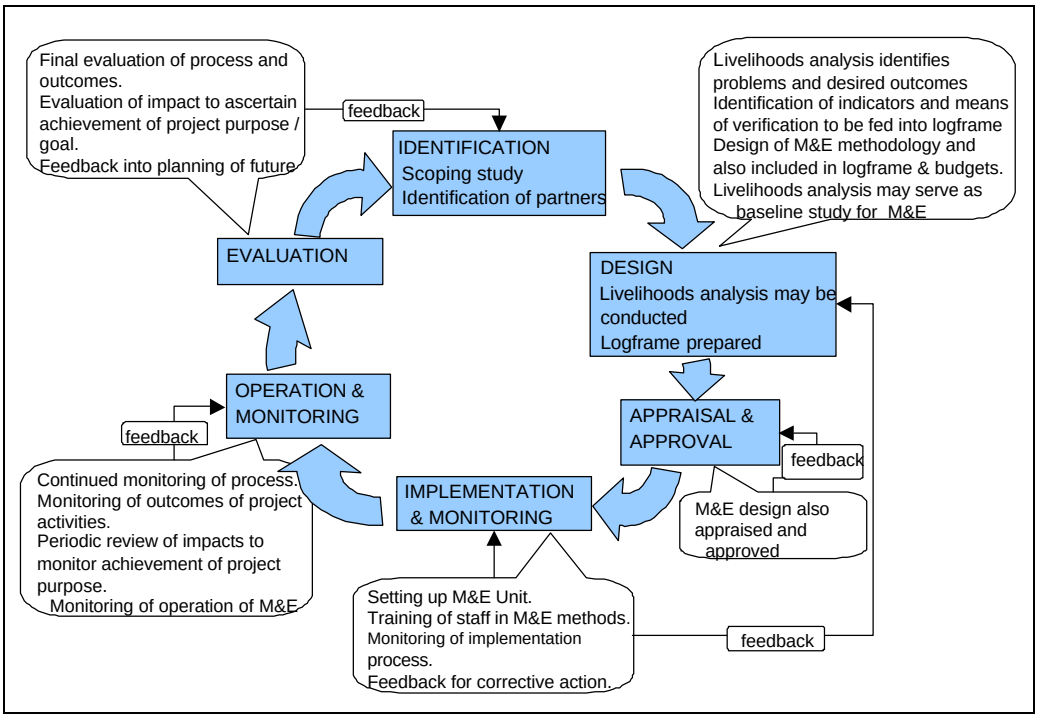
How to monitor?

Monitoring can be undertaken in a variety of ways. The amount of time and effort spent on monitoring can vary from making the occasional site visit and holding a few informal conversations with members of the public (or even with work colleagues or friends that have experience of the scheme at first hand) to more intensive data collection of the type used during any stakeholder or public consultation process (see Section 3.3) that might have been conducted – or closely tied in with the evaluation process.

Monitoring and evaluation can take place at the project, programme and country strategy level. Local governments have a responsibility for the stakeholders of such projects under their jurisdiction (including non-transport interventions) and have a responsibility to monitor project progress and how they impact on the livelihoods of everyone within their sphere of influence, and not just the project beneficiaries. Figure

7.1 illustrates how monitoring and evaluation fits into the project cycle where monitoring is an iterative learning process with feedback loops connecting implementation and operation, and lessons feeding back to the design stage of new development projects and programmes. Monitoring and evaluation should also aim to build capacity for continuous learning beyond project completion, and the creation of relevant information for policy and planning decisions (Pasteur, 2001).

Figure 7.1: Monitoring and evaluation in the project lifecycle (Pasteur, 2001)



Measurable indicators are important for monitoring and evaluation processes as they provide a checklist for identifying and measuring trends and changing livelihood outcomes. Indicators may be qualitative or quantitative:

Quantitative Indicators: for example, incidence of road traffic accidents and associated injuries, disabilities and fatalities, economic indicators including loss of income, public expenditure on road safety enforcement, engineering and education interventions etc.

Qualitative Indicators: for example, perceptions of road safety hazards, vulnerability and power, subjective indicators of well-being, quality and value of life, quality of services, impact of road safety enforcement, engineering and education interventions on behaviour etc.

At the country level, sectoral performance indicators provide a preliminary and inexpensive assessment of a nation's transport situation. Used with comparators from other countries and specific benchmarks, these headline indicators provide summary information of the national road safety strategy and performance. Understanding transport sector performance requires careful measurement as transport produces pervasive externalities, which are difficult to measure, including congestion, pollution and traffic accidents.

Who to monitor?

Monitoring should go beyond the actual target group. In addition to obtaining public reactions to a scheme (i.e. consultation) an important element of monitoring is to ensure that there is a positive consensus among the local stakeholders and practitioners as to the worth of the project, as well as a feeling of ownership and involvement in the way it is conducted.

In a community road safety education project these are likely to include:

- National or State Government
- The Local Authority
- Local road safety officers
- Those delivering the programme
- Police
- Schools (e.g. head teachers and teachers)
- Children
- Parents/guardians/carers
- Children
- Other people living in, and visiting, the local community

Collecting information for monitoring purposes

The same methods of obtaining information for monitoring purposes are used for consultation (see Section 3.3), problem identification (see Section 4) and evaluation (see section 7.2). These include:

- Interviews (informal, open, semi-structured or structured) conducted with managers of the project or those delivering, or receiving the intervention. The feedback received may give different messages; and it will be necessary to balance the various views, and take account of any vested interests that may 'cloud' peoples views
- Focus group discussions with any target groups or those otherwise likely to be prejudiced, positively or negatively, about the workings of the programme approach
- Observations – these can be used to examine if any desired (observable) behaviour change has occurred. However, properly controlled observational studies can be difficult to design and improved 'awareness' may not be directly observable
- Surveys/questionnaires - unlike the first two methods above, these can provide qualitative measures that can be tested for statistical significance. However, they are reliant on (knowing and) asking the right question(s) in an appropriate way.

Whatever method, or methods, are used it is important to conduct them at the appropriate time. Sometimes this will involve collection of information very early on in the process (pre-testing), during the intervention itself and typically at some time after the programme when people, and perhaps traffic, have had the chance to permanently adapt to any new situation.

It is the requirement of some donor agencies for development projects and programmes to include a logical framework in the planning of the intervention, in order to provide a benchmark for improvement, and to assist in monitoring progress. An example of a 'Logframe' for road safety education and publicity is given in Appendix B3 to demonstrate what can be adopted as means of verification for producing outputs that have a positive impact on achieving the purpose of the project or programme (World Bank, 2002).

A simple but effective monitoring and evaluation system is required to track progress of road safety activities and to estimate the safety impact. For action plans in developing countries, initial focus is often on institutional strengthening and capacity building rather than just on reducing of casualties in numeric terms. Monitoring and evaluation systems established as part of implementing action plans and safety initiatives must therefore, where appropriate, be able to indicate progress towards achievement of institutional impact and developmental objectives.

References

Hussein, K. (2000). Monitoring and evaluation impact on livelihoods: lessons from experience. London: Overseas Development Institute

Pasteur, K. and Blauert, J. (2000). Participatory monitoring and evaluation in Latin America. Brighton: Institute of Development Studies

World Bank (2002). Road Safety. www.worldbank.org/transport/roads/safety.htm

7.2: EVALUATION OF IMPACT ON ROAD USERS

"Evaluation of impact involves the assessment of changes to livelihood outcomes, during and after intervention has taken place" (Hussein, 2000)

What is evaluation?

Evaluation is a selective exercise that attempts to systematically and objectively assess progress towards, and the achievement of, a desired outcome or outcomes. Evaluation is not a one-time event, but an exercise involving assessments of different scope and depth and typically carried out at several points in time.

Why evaluate?

In addition to monitoring newly introduced schemes it is also necessary to evaluate them. The evaluation can be used to demonstrate success (or failure), can be used to establish why it did or did not work, and to learn from successes and failures so that improvements can be made in later programmes.

More specifically, it can be used to assess whether the materials or delivery of the programme are appropriate and effective and can identify any problems that can or should be remedied.

It is also likely that at some point in time during a programme the question "Did (or does) it work?" will be asked. In order to provide a credible answer it will be necessary to have conducted an appropriate evaluation.

In some circumstances an evaluation can help to inform policy decisions. For example, it can help you assess if the programme is a good use of resources and whether funding should continue or be expanded. The evaluation can also be use to help gain funding and other types of support from outside agencies for future work.

The results of the evaluation should be made available to other practitioners – and not kept secret, even if the evaluation identified flaws or problems with the project. The evaluation should provide information to promote 'good practice'.

An important element of the evaluation process in community programmes enables those taking part to comment on the programme and share their experiences.

Planning the evaluation

Evaluation is not something that is done at the end of a project. The evaluation needs to be considered during the initial programme planning and development and integrated into the overall design. It should also continue as an ongoing process throughout the implementation. The evaluation needs to be catered for in planning both the timetable and costing of the programme. Some evaluations (such as 'before and after' methods) require information to be collected early in the projects life-cycle and a 'rule of thumb' budget of 10–15 % of the total programme costs should be allocated for an evaluation component.

Planning an evaluation involves clearly identifying the aims and objectives of the project. It will also put procedures in place for collecting information, or data that will show whether the aims and objectives have been met.

Road safety programmes are designed to bring about improvements in a variety of ways. Although safety is the prime objective, this should not be at the expense of other factors such as increased travel time and exposure to pollution (e.g. traffic fumes and noise nuisance). Also, all road users need to be catered for so that drivers and users of public transport should not be inconvenienced unnecessarily to make it easier and safer for pedestrians. This means that a wide variety of issues need to be considered as part of any evaluation. In fact many of the investigative methods used to study the problems at the start of the project, and information collected to aid decision-making during the project, can be repeated once the scheme is complete to supplement this information.

How to evaluate?

There are a variety of ways to evaluate community projects and also many ways of examining whether road safety programmes are successful. A useful review of techniques that can be used in the field of education, health and safety has been produced by Pawson and Myhill (2001).

There are a number of elements, or stages, involved in any evaluation. Some of these will involve:

- Deciding who will be responsible for the evaluation
- Defining the objective of the evaluation
- Identifying the target group
- Selecting what evaluation method will be used
- Deciding on the information required
- Testing evaluation materials
- Analysing and interpreting the results
- Writing an evaluation report
- Making the results of the evaluation available to others.

However, not all evaluations follow exactly the same pattern. For example, Figure 7.2 provides a schematic view of the stages involved in an evaluation – adapted from Thompson and McClintock (1998). Some of these various stages are considered in detail here.

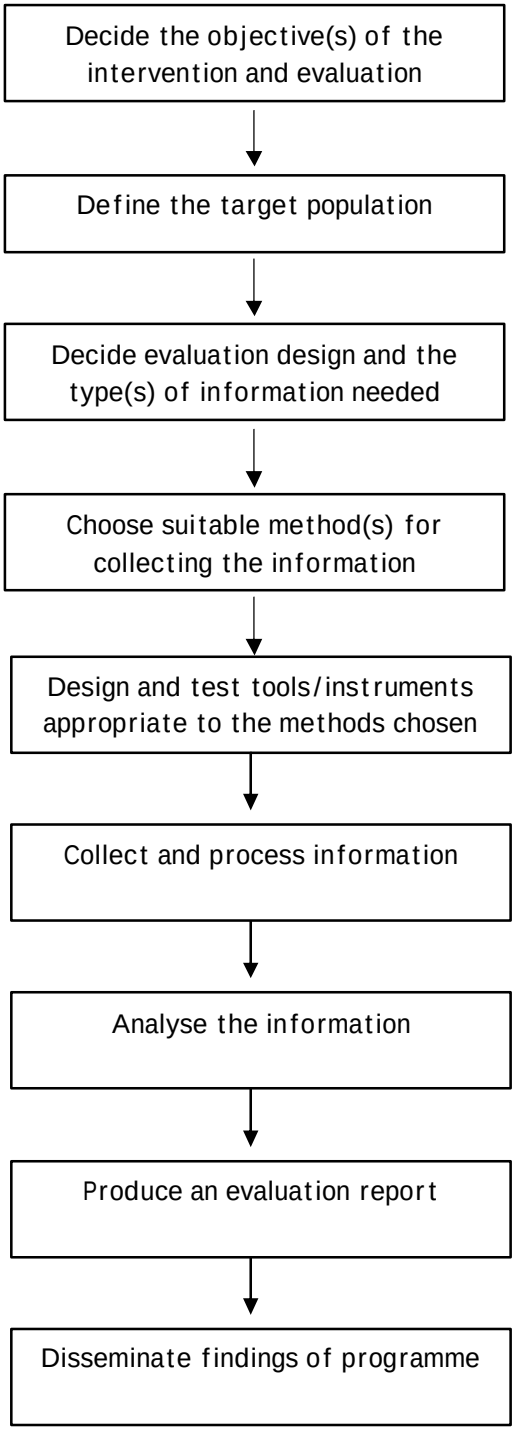
Who should conduct the evaluation?

The evaluation can be conducted by an individual, or a team, either external or internal to the project team. While both might use the same methods it is important to consider whether the findings might be viewed differently (and carry different 'weights') if the evaluation is seen as being independent, impartial and without vested interests.

While it is not necessarily inappropriate to conduct an internal evaluation, an external evaluator (although probably more expensive), can often provide a new perspective on the programme and is unlikely to have been involved in planning the programme, or to have developed any relationships or friendships that might influence how the programme is perceived. However, in practice, it is generally easier - and cheaper - to conduct an internal evaluation; as well as being easier to co-ordinate, the evaluation and monitoring with other aspects of the programme. If the programme team is evaluating itself, steps

should be taken to minimise potential biases, for example, by issuing self-completion questionnaires that are returned anonymously by post instead of carrying out face-to-face interviews.

Figure 7.2: Proposed stages in the evaluation process



(Adapted from Thompson and McClintock, 1998)

What types of evaluation?

There are various ways of evaluating programmes. In some cases the method used will be determined by the aims and objectives of the programme itself, but in most cases a variety of methods are possible and often more than one 'level' of evaluation is conducted. Deciding on the type of evaluation will involve making decisions about what (experimental) design will be used and what types of information will be collected.

Some of the most frequently used methods are:

Process evaluation: This type of evaluation examines how a programme operates and is perceived by the people involved. It is concerned with:

> "seeking to understand what the programme actually does to bring about change." (Pawson and Myhill, 2001)

It typically involves conducting either interviews and/or focus group discussions and can examine the opinions of participants to identify and develop best practice from their point of view.

Such an evaluation might consider:

- The management of the programme (including delivery and cost)
- Staffing requirements and training
- Examining how, and to what extent, the programme was implemented
- Participants' opinions and satisfaction with the programme
- To what extent the target group was reached
- The acceptability of those delivering the programme, the programme itself and the materials/channels used to the target group
- How it was used

Outcome evaluation: Here the focus is on outcomes or changes that result from the programme; usually related to the programme goals and objectives. The desired change might be measured in terms of attitudes, knowledge, behavioural, or in terms of numbers, or type of accidents. Measurable indicators are required to monitor changes and examine the extent to which the programme met its objectives.

An evaluation that focuses on outcome measures will inform you whether the programme works but not how or why. An evaluation of process measures can be used to answer these questions.

Summative evaluation: This type of evaluation is one which is intended to examine the extent to which a programme meets its overall stated objectives. The question that is usually asked is 'Does it work?' Often, policy makers or funders of a programme will commission this type of evaluation to decide whether or not a programme should continue.

Pawson and Myhill (2001), however, warn that studies that focus exclusively on the question 'Does it work?' may not be particularly useful when considering more general application of the programme(s). What works (or fails) in one context may be ineffective (or more effective) in another. Instead, it is recommended that evaluation research should ask the broader question:

> "What is it about the programme which works, for whom in what circumstances, and in what respects?" (Pawson and Myhill, 2001)

Typically the evaluator is independent in this type of evaluation and will not provide feedback to the programme staff during the evaluation. Normally, a formal evaluation report will be the only output from the evaluation which will only indirectly affect the delivery of the programme. Data collection is focused on the implementation of the programme and outcome measures. Quantitative, experimental designs tend to be favoured in this type of evaluation. An important part of the evaluation may be to understand why the programme is or is not working. In this case the processes (as well as the outcomes) will also be investigated.

Formative evaluation: The aim of a 'formative' evaluation is to identify the strengths and weaknesses of the programme design and implementation. It investigates whether anything needs to be done to improve the programme.

It is carried out during the development, or redevelopment, of a programme to give feedback to people who are trying to improve something.

Typical questions asked in a formative evaluation concern the effectiveness or usefulness of different materials or programme delivery techniques. The evaluation examines whether the programme activities are suitable for the target audience. It can also ask, for example:

- When is the best time to introduce the programme?
- How much staff training is required?
- What resources are needed to implement the programme?

Formative evaluation differs from summative evaluations in that feedback is provided throughout the evaluation by the evaluator (the person carrying out the evaluation) to those delivering the programme, that is the developers and programme managers. This will often result in changes being made to the programme during the evaluation to address problems as they arise. The role of evaluator is thus more interactive than in a summative evaluation.

The emphasis in this type of evaluation is on programme processes. The evaluator seeks to understand how the programme actually operates and gain an understanding of:

> "why certain things are happening, how the parts of the programme fit together, and how people perceive the programme" (Patton, 1986)

This understanding should enable the evaluator to identify which activities are more successful in reaching the programme goals. This type of evaluation can also be used to clarify goals and identify programme outcomes.

The study of process is not limited to formative evaluation, nor are outcomes limited to summative evaluations. In both types of evaluation, process and/or outcome measures can be examined.

Developing evaluation objectives

An evaluation objective is based upon what you want to find out about the programme. To answer this broader question you will need to consider:

- What are the desired outcomes?
- Who is being targeted?
- Who does it work for?
- How does it work?
- Why does it work?
- How could it be improved?

Both the programme outcomes and processes need to be examined to answer these questions.

Designing the evaluation

When designing an evaluation it is necessary to consider:

- What elements of the programme are being evaluated?
- Why is the evaluation being conducted?
- Who is the evaluation being conducted for?

Only when these questions have been decided is it possible to consider the information that will need to be collected and the experimental design that will be used.

As already discussed in other sections of these guidelines, there are two types of information in general that can be collected. One is qualitative, or non-numerical, and the other is quantitative, or numerical. Qualitative information is typically obtained by asking open-ended questions (those that do not require, for example, simple 'yes/no' answers) in interviews and focus groups or when analysing documents. The data collected is typically non-numerical and related to categories. Quantitative methods collect numerical data that can be used in statistical analyses. It can be provided by, for example conducting surveys or recording information on particular behaviours – how such data can be obtained is discussed in detail below.

Choosing the experimental design

Ideally, a properly designed evaluation should have at least two components.

Firstly, it should collect both 'before' and 'after' information, so that changes over time can be examined. The before measures need to be collected prior to the programme; the after measures need to be collected after implementation – and usually after a period of time, sometimes as long as 6 months has elapsed, to see if any changes are likely to be long lasting. Periodic low scale monitoring should establish when things have settled down sufficiently to start collecting the after data.

Secondly, in addition to the 'experimental' area (where the scheme is to be introduced) another 'control' area also needs to be monitored. This makes it possible to allow for any uncontrollable events (outside the scheme itself) that might occur during the project. In contrast to the experimental area no intervention will be attempted in the control area.

Depending on the type of information collected a number of research designs can be employed. Some of these are:

Randomised controlled trial: In a randomised control trial, each 'participant' (that could be an individual, a school, or even a community) is randomly assigned to an experimental or control group. This random assignment aims to remove differences between experimental and control groups by distributing outside influences equally between the two. It enables the researcher to conclude that any statistically significant differences that arise between the groups following an intervention are due to the intervention and not to pre-existing systematic differences between those receiving the intervention and the control sample. However, in practice this method is unlikely to be feasible for evaluating a small-scale community road safety education programme since random allocation would be problematic – or impossible.

Quasi-experimental design: A quasi-experimental design is used when random allocation is not possible. In this experimental design, the experimental and control groups are matched on the characteristics that may be expected to produce a difference in the effects of the intervention – such as whether they are rural or not. The matching process should ensure that the overall distribution of variables is equivalent within each group.

Randomised control trials or quasi-experimental research designs should ideally be used to evaluate safety education interventions.

Cross-sectional survey: A cross-sectional survey involves collecting data from a group of people (a sample of a chosen population/community) at one point in time. It can then be used to identify differences within the community.

Longitudinal survey: In a longitudinal survey data will be collected from the same group of people more than once with the objective of monitoring or detecting a change. It is important to recognise that the survey itself may bring about a change in knowledge or awareness, so that this type of evaluation should include a control group that undergo the same number of surveys – but no intervention.

Controlled before and after study: In a before and after study involving both experimental and control groups, both groups are tested before the intervention is given (pre-test) and again soon after it has been delivered (post-test). The before measure is used to obtain a baseline measure (of skill, knowledge, behaviour or attitude) and to demonstrate the equivalence of the groups before the intervention. Analysis of the after data should then show whether there has been any change in both groups and whether the change in the experimental group is significantly different from the change in the control group.

A second post-test measure can also be taken some time after the intervention has been delivered (for example 3 months). This will provide a more accurate measure of the maturation effect and demonstrate whether the change is maintained over time. However, the increased amount of data collection will be reflected in the cost of the evaluation.

Controlled after study: In this design no pre-test measures are collected from the experimental and control group, and so the comparability of the untreated groups cannot be demonstrated. Where the evaluator is confident that there are no significant

differences between the groups this approach has the advantage that it is cheaper and less time consuming because it requires less data collection.

Uncontrolled before and after studies: This design is useful when checking that the administration of an intervention is as effective as that of the programme developers or of other road safety units. Assuming that the developers or other units have conducted a satisfactory controlled test, you need only copy their methods but test an experimental sample only. You should compare your results with the reported results and if they are not significantly different then your administration of the intervention is as effective as the published administration.

All evaluation objectives should be 'SMART' – that is: Specific, Measurable, Agreed (by all involved), Realistic and Time-limited.

Identifying the target group

Community road safety education interventions may be aimed at:

- Children
- Adults
- Faith groups
- Social groups
- The general public
- Companies and institutions

The target group is not necessarily the people who received the intervention but the intended beneficiaries, for example, school children can be used to pass road safety advice to their parents. An evaluation can tell you whether or not you reached this group. When studying processes the evaluation will go beyond the target group and also examine the perceptions of other people who have an interest in the outcome of the programme (stakeholders or participants).

Types of information that can be used in evaluating a road safety programme

There are many different 'levels' that can be used to evaluate road safety interventions. These include:

Accident statistics: Although the overall aim of a road safety education programme may be a reduction in road casualty or accident rates, or more likely in particular types of accidents, these indicators are unlikely to be usable as an outcome measure in local studies. There are a number of reasons for this: for example, the number of accidents occurring in a community is likely to be too small to detect any significant differences when comparing one short period (such as a year) with another, particularly if a change in social behaviour is required; also accident reporting systems are often inaccurate in developing countries.

Behaviour: It is normally accepted that improved behaviour results in increased safety so that behaviour is often used as an accident 'surrogate' in evaluations. However, it is often difficult and expensive to collect and analyse this type of information. While it is possible to monitor observable behaviours that are related to road safety – such as walking while facing oncoming traffic, not obstructing pavements, crossing the road where there is limited visibility, etc – other behaviours such as speeding and drinking and driving present bigger problems.

Recording the behaviour observed can also be problematic and it is often difficult to determine the age, or sex, of those being observed and the observer's view may also be restricted. It should also be remembered that the people being observed have not necessarily taken part in the programme.

Attitudes and awareness: Many education programmes aim to improve attitudes and awareness to road safety issues. It may be the case that people do not recognise that road safety is a problem, or more particularly that they can personally do something about it by taking responsibility for themselves. Questionnaires can be developed to measure changes in such attitudes by using rating scales, ranking or even 'yes-no' questions and qualitative measures (e.g. focus groups) can also be used to provide more detailed information.

It is generally assumed that improving attitudes and awareness brings about a change in behaviour (although the actual behaviour may not be observable or measurable), which leads to safer behaviour.

Improved knowledge, understanding and skills: Education programmes are typically designed to improve people's knowledge and skills and understanding of the road safety issue. Again any changes in these can be measured using a variety of qualitative and quantitative techniques (refer to Section 4 for further information).

Processes: Here the evaluation is concerned with how the programme itself was seen to work, typically by the people involved in developing, managing and conducting it. Qualitative techniques are usually used to collect information on process measures and involve the collection and analysis of narrative rather than numbers. The methods used include interviews, focus groups, observation and document analysis. Quantitative approaches such as questionnaires may also be used to collect process measures.

Methods used to collect evaluation data/information

Appropriate methods for collecting data are described in detail in Section 4. The following provides a summary of methods used in the evaluation of CRSE programmes:

Accident data: Accident data is typically collected by the police. Some forces will have dedicated traffic police, with responsibility for recording accident data - and sometimes road safety initiatives that might involve education (e.g. talking to children in schools). Some countries have community policemen who involve themselves with a variety of policing duties, which may sometimes include road safety.

Observation: Road user behaviour can simply be observed as it takes place and particular aspects noted on a response form. However, considerable thought has to be given to 'who' is being observed, for example, is a pushed barrow a vehicle, and what is being observed, for example the demographic characteristics of drivers and pedestrians (who might both be children, mother and child – or son/daughter – or two young or elderly adults). The time of observation is also likely to be critical. It is vital to remember who the target group is and what behaviour is being targeted.

Focus groups: Focus group discussions work on the same basis as interviews but ask open-ended questions to a group of people. The advantage of a focus group is that the

comments of one participant may stimulate the ideas of others. They are useful when examining the attitudes and opinions of groups.

The composition of the group should be considered carefully. To encourage discussion the members of the group should be similar, in terms of level of involvement in the programme or demographics, and regard each other as equals. If members of the group regard a participant as having 'expert' or greater knowledge this may hinder the discussion. Several focus groups should be run with different groups of people to gain information on different perspectives. In some cases a mix of participants with a range of views can make a successful group. In these cases the group dynamics should be considered carefully.

Questionnaires: Questionnaires are simply a series of questions designed to provide information relevant to the programme. They can be designed to 'interview' a small number of people or to 'survey' a large number of respondents. They can provide useful background information (for example: age, whether a parent, literacy and ethnicity) as well as data on attitudes and knowledge depending on the type of question asked and the responses required.

Interviews: One-to-one (personal) interviews can be used to collect information/feedback from those involved in a programme. They can obtain data on (reported) behaviour, attitudes, knowledge or skills; as well as about the programme itself.

In-depth interviews are often carried out with participants to explore their views of the programme and how they used it. They use open-ended questions, which do not have any pre-coded response categories to generate as much information as possible. Open-ended questions are used because they encourage a fuller response and cannot be answered with a 'yes' or 'no'. Generally, they ask 'What, How and Why?'

Interviews are especially useful at the beginning of a study to explore the issues and develop survey materials. Interviews with programme staff and participants enable the evaluator to get a feel for the programme and their views of the programme. They are also useful with groups who have difficulty reading or writing.

Surveys: Surveys are a systematic way of collecting numeric data, usually in the form of questionnaires and are used to collect information from programme participants about their opinions and views of the programme as well as information about what they know. These surveys usually involve the distribution of self-completion questionnaires (perhaps by post) or conducting a series of face-to-face interviews (either at the road-side or in the home), or which ask participants, for example, about their opinions of the programme and measure their level of 'satisfaction'. Questionnaires can be paper or computer based and even conducted by phone – although this method is unlikely to be suitable in developing countries. Interviewers can be instructed to obtain either a random sample or a representative one that obtains a pre-specified 'quota' based on sex, age, employment status, etc.

Document analysis: It is useful to consider existing records before collecting data from scratch. Existing records are often a good source of information on, for example, the

number of people participating in a programme, or the budget. These may be routinely collected to monitor the programme and will often be readily available.

Other documents related to the programme such as the minutes of meetings and correspondence can also be studied. These give an insight into decisions that affected the programme. The documents may provide information on how the programme developers intended the programme to be implemented and how and why these intentions were modified during and after the development. Also, the content of materials produced for the programme can be assessed for their suitability for the target group.

It is important that, whatever the outcomes of the evaluation, the findings are disseminated (see Section 8.2).

Some general guidance

Programmes dependent on elaborate social processes will always generate complex outcomes. Anticipating and understanding these patterns demands a partnership of 'process' and 'outcome' evaluation, and requires the use of both quantitative and qualitative methods.

Policy-makers should desist from anticipating that evaluation research will always discover 'what works', for no initiative will work for all subjects in all circumstances. The really instructive evaluation question is 'what is it about a programme which works for whom, in what circumstances, and in what respects?'

Programme effects are always diverse and evaluators should avoid reliance on single measures to monitor programme success (or failure). Evaluators should always use multiple measures, thereby anticipating unusual and unexpected outcomes associated with the processes involved in constructing and implementing initiatives.

References

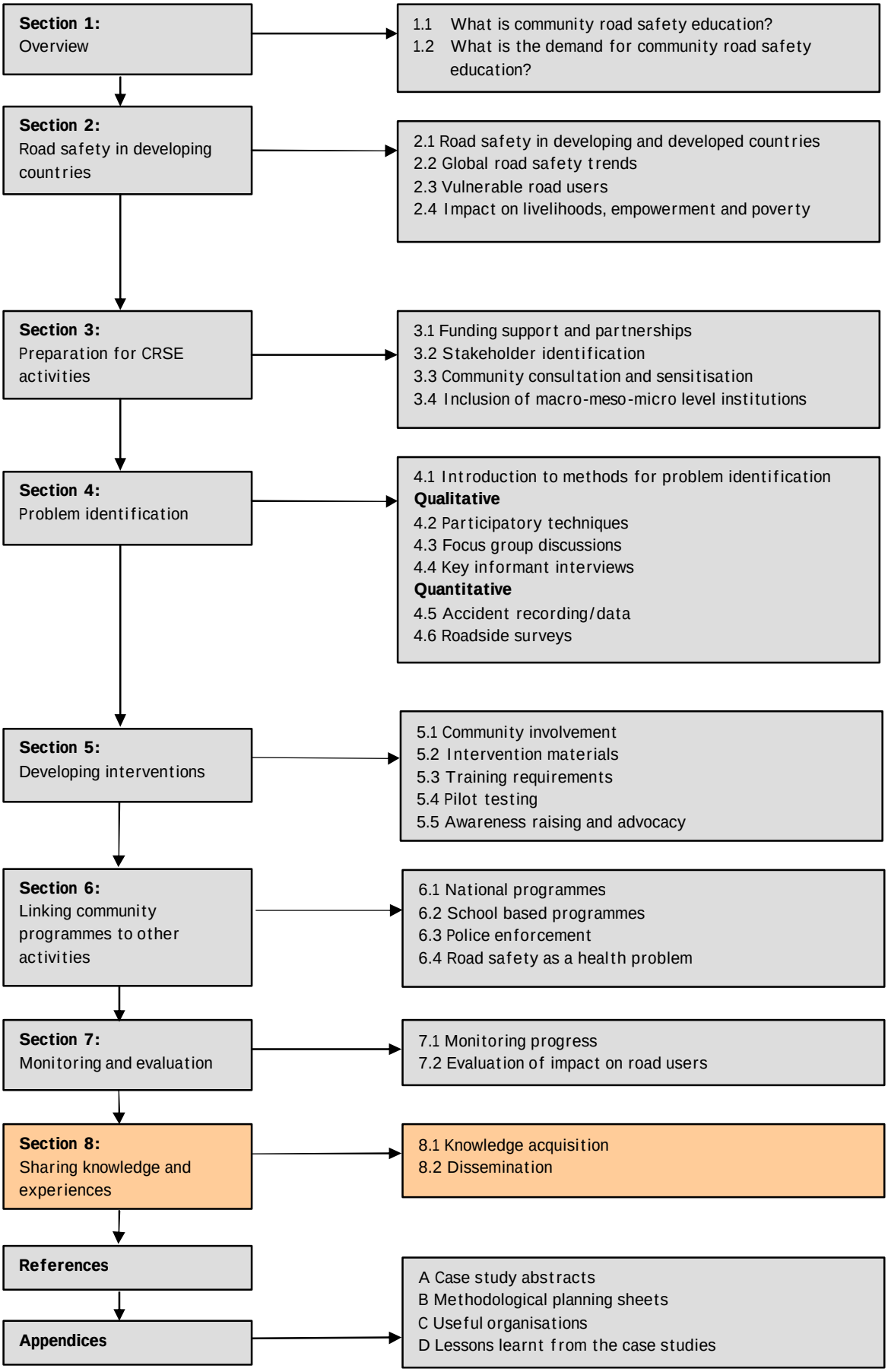
Hussein, K. (2000). Monitoring and evaluation impact on livelihoods: lessons from experience. London: Overseas Development Institute

Patton, M. Q. (1986) Utilization-focused evaluation (2nd ed.). Newbury Park, CA: Sage

Pawson, R. and Myhill, A (2001) Learning lessons: enhancing evaluation through research review, TRL report 507. Crowthorne: TRL Limited

Thompson, N.J. and McClintock, H.O., (1998) Demonstrating your program's worth: A primer on evaluation for programs to prevent unintentional injury. Atlanta, Georgia: National Center for Injury Prevention and Control

Section 8: Sharing Knowledge and Experiences


Section 1:
Overview
1.1 What is community road safety education?
1.2 What is the demand for community road safety education?
Section 2:
Road safety in developing countries
2.1 Road safety in developing and developed countries
2.2 Global road safety trends
2.3 Vulnerable road users
2.4 Impact on livelihoods, empowerment and poverty
Section 3:
Preparation for CRSE activities
3.1 Funding support and partnerships
3.2 Stakeholder identification
3.3 Community consultation and sensitisation
3.4 Inclusion of macro-meso-micro level institutions
Section 4:
Problem identification
4.1 Introduction to methods for problem identification
Qualitative
4.2 Participatory techniques
4.3 Focus group discussions
4.4 Key informant interviews
Quantitative
4.5 Accident recording/data
4.6 Roadside surveys
Section 5:
Developing interventions
5.1 Community involvement
5.2 Intervention materials
5.3 Training requirements
5.4 Pilot testing
5.5 Awareness raising and advocacy
Section 6:
Linking community programmes to other activities
6.1 National programmes
6.2 School based programmes
6.3 Police enforcement
6.4 Road safety as a health problem
Section 7:
Monitoring and evaluation
7.1 Monitoring progress
7.2 Evaluation of impact on road users
Section 8:
Sharing knowledge and experiences
8.1 Knowledge acquisition
8.2 Dissemination
References
Appendices
A Case study abstracts
B Methodological planning sheets
C Useful organisations
D Lessons learnt from the case studies

8.1: KNOWLEDGE ACQUISITION

"Through the GRSP knowledge base, users can share experiences, learn what is being done in road safety, exchange knowledge, present and promote expertise, make contact with other people with the same areas of interest, be presented with the work of others, and contact other specialists or organisations who have dealt with similar experiences or assignments". (www.grsproadsafety.org)

What do we know about community road safety education?

The 'concept' of safe communities first became widely internationally popular as a result of the activities of the Swedish Karolinska Institute who organised the 1st International Conference on Safe Communities in 1991.

Road safety has been recognised as being an important part of community safety. It is perhaps fair to say that 'safe communities' have been more a focus of developed countries than developing countries. The 9th conference on Safe Communities, Safe Comm-9, held in Dhaka, (Bangladesh), in 2000, was the first time the conference was held in one of the 'least developed countries' – and one recognised as having a very serious road safety problem (Hoque, 2000).

Safe community programmes have typically been concerned with social problems other than road safety (such as various forms of violence and crime, the use of drugs and safety at work). Road safety is now universally recognised as being a key element of safe communities and receives extensive attention by national and regional organisations.

Typically, community education programmes have focussed on issues such as health, livelihoods and literacy. The main theoretical framework for such programmes was based on general health promotion concepts and a participatory strategy for community involvement (Svanström, 2000). Programmes were developed based on the precept that health and safety is a fundamental right of human beings, and a prerequisite to the maintenance and improvement of the health and welfare of a population. These programmes have generated a great deal of information about the effectiveness of different approaches to informing communities and the channels of communication which are most suitable.

Following the First World Conference on Accident and Injury Prevention, held in Stockholm in 1989, a Manifesto for Safe Communities was prepared, which declared that research and demonstration projects for injury prevention and control must include community level programmes in order that the public become actively involved in progressing safety schemes. Since this conference 48 countries have been formally designated to have examples of 'safe communities' by the World Health Organization, including Australia, Sweden, Thailand, Canada, UK and South Africa; and there now around 150 safe community programmes worldwide.

However, such general safe community programmes are not universally accepted as being a panacea for reducing the high numbers of road traffic accidents. Many safety practitioners would argue that dedicated and targeted safety education programme

have a greater capacity to bring about behavioural change among drivers and pedestrians, and these are now becoming more pervasive in countries of the developed world.

Unfortunately, there is relatively little reported empirical evidence to categorically prove that community road safety programmes are, of themselves, directly responsible for a reduction in road traffic accident frequency and resulting injuries. In part this is because of the problems with collecting accurate accident data and because (small) communities typically have only a small number of recorded accidents each year. In order to show statistically significant improvements over a relatively short period it would be necessary to involve a sizeable number of communities in the evaluation. Also, because in a country with a rapidly increasing accident problem a community intervention could be judged successful even if accident numbers were not reduced, it is necessary to include (non-experimental) control areas to isolate the results of the intervention. Such properly designed evaluations can be expensive. As a consequence most claims for success are often based on attitude and 'behavioural' change in drivers and pedestrians (Moller, 1999).

It is clear that a simple transfer of strategies and practices for road safety education from a developed to developing country context is likely to be ineffective due to variations in educational systems, teaching methods, traffic regulations and conditions, as well as exposure to risk; since in many developing countries young children take responsibility for looking after younger siblings. Another important factor is that in many countries parents and older carers are not aware of their responsibility to educate (or set a good example) to children. Hence a prerequisite of road safety education is to research and develop teaching methods and materials in the country in which they will be used, prior to implementation.

However, despite such transfer and evaluation problems community road safety programmes are increasingly being recognised around the world as an essential part of good practice in the delivery of road safety, especially when dealing with local issues and accessing groups which cannot easily reach media channels and formal education. Non-government organisations (NGOs) have an increasingly key role in promoting the community road safety approach, as the following example in Box 8.1 demonstrates.

Box 8.1: Community road safety approach in Nepal

An early example of the 'community approach' was undertaken in Eastern Region of Nepal for the road safety education programme (funded by DFID) as part of the Eastern Region Roads Maintenance (ERRM) programme, which introduced participatory methods to impart road safety information to primary school children, villagers and women's groups in Sunsari, Morang, Jhapa and Dhankuta Districts (ERRM, 1995). Teaching materials, including road safety books, posters and songs were devised to circulate to road user groups, and a puppet show programme was developed to raise awareness in a sustainable and cost-effective manner. The authors of these guidelines are currently unaware of any published evaluation of the programme's effectiveness in reducing pedestrian casualties. However, it was reported that the target communities were very responsive to the use of participatory methods, and that it was very popular among all community groups trialled - especially those with a high level of illiteracy.

Source: ERRM (1995)

In summary, it appears that community participation is gradually becoming mainstreamed into the road safety programmes of developing countries. The emphasis is no longer on conventional teaching of school children to improve their awareness, develop their safety skills and inform them of safety 'codes' (e.g. how to cross the road), but rather to incorporate all road users (thus representing the entire community), while targeting vulnerable groups that may have been identified by themselves (or by the use of participatory methods - see Section 4). In fact this line of thought is finally penetrating central government policy in a number of areas. The Government of Vietnam is an important example of this trend with the recently approved National Policy on Injury Prevention for 2002-2010. This policy is not restricted to road safety, but promotes injury prevention at work, home, school and public places and apportions responsibility across sectors to ensure the principles of safe communities pervades every government ministry.

The safe community programmes which emerged throughout Europe and other countries over the past twenty to thirty years that have become synonymous with accident prevention and injury reduction, attribute their success to a reliance on existing local community networks, coverage of all ages, environments and scenarios, empowerment of the socially weak, and continuous tracking of high risk environments and groups. These programmes represent sophisticated research and analyses of accident data, which is not yet replicable in developing countries because of problems with underreporting of (road traffic) accidents. Yet, with a combination of community participation methods as described above, and institutional support at local, regional and national levels of governance, CRSE programmes can spearhead a reduction in global road accident statistics.

There is also considerable merit in RSE programmes partnering with the media, including local newspapers, television, radio stations and communications technology. The media can directly bring safety messages to the community, improve programme 'visibility' and promote support among interest groups and institutional organisations (such as the Institute of Road Traffic Education in India). Electronic media such as radio and television have the advantage of being able to reach the illiterate mass and can motivate people at the grass-roots level (Barua, 2000), although these mechanisms are often inaccessible to the remote poor. The state has a role to play in providing affordable communication mechanisms, such as radio, to the poor so that programmes on health, sanitation, the environment and road safety can be disseminated to remote households.

There is a considerable 'knowledge base' on community road safety education projects that have been conducted around the world (although mostly in developed countries) yet it is not always obvious how to go about conducting such a programme and, importantly, there is often limited information about whether the programme was successful or not. It is also vital to recognise that different countries – and even various communities within the same country – will be very different with regard to the prevailing social, environmental, cultural and economic conditions. This means that it is not possible to simply import a programme from one country (or community) to another. Each community needs to be treated as a special case since it will have its own socio-economic characteristics and problems. It is hoped that these guidelines will accelerate the use of CRSE programmes and provide local practitioners with useful guidance.

References

Barua, D.P. and Barua, P.C. (2000). Role of media in promoting safe communities. Proceedings of the 9th International Conference on Safe Communities. 26-28 February, 2000; Dhaka, Bangladesh

ERRM (1995). Road safety component of the road maintenance project: outline of proposed road safety education input. Unpublished technical report. Uganda: Eastern Region Roads Maintenance

Global Road Safety Partnership: www.grsproadsafety.org

Hoque, M. M. (2000). On creating supportive environments for safe community. Proceedings of the 9th International Conference on Safe Communities. 26-28 February, 2000; Dhaka, Bangladesh

Moller, G. (1999). Millicent: myth or miracle. community evaluation report for the SE and SA division of general practice and the Wattle range road safety committee

Svanström, L. (2000). Safe communities: successes and pitfalls in the program development and evaluation. Proceedings of the 9th International Conference on Safe Communities. 26-28 February, 2000; Dhaka, Bangladesh

8.2: DISSEMINATION

"The objective should be to develop a sustainable dissemination and communication system, using channels open to stakeholders that will facilitate dialogue and exchange of information, knowledge and experience on operational and topical aspects of the area"

Why disseminate?

The experience of carrying out a 'good' or 'bad' practice community road safety education programme should be shared with other road safety practitioners so that they can learn from the experience, and transfer knowledge to other networks.

The role of information and knowledge in creating and enforcing good decisions is complex, often unclear (even to the person making the decisions) and varies considerably. What information people need depends on a range of factors to do with time, place, situation, circumstance, existing knowledge and intention.

Active networking is one of the most successful strategies in engaging users and promoting information uptake. But the transport sector is not as well networked as other infrastructure service sectors such as health and water, neither successfully connecting different transport stakeholders, nor engaging with other development actors who could be interested in issues of mobility. Weaknesses in the sector include inadequate knowledge and sharing environments within transport organisations; choosing communications media that are appropriate to their own environments rather than those of their users; charging for information and choosing English as the dominant language of dissemination.

Information that reflects local realities

People from all continents want information that describes their local environment. At the national level there can be a lack of reliable information about the conditions and needs of road safety in a particular country or region. Policy decisions are therefore taken on 'best estimates'.

Users want information that reflects their reality. This could include research that tackles problems identified by the transport community 'on the ground' (by researchers in the funding agency's country); that uses analytical tools familiar to people who are experiencing the problems; that uses local consultants; and that acknowledges and integrates previous research work carried out in developing countries. There is a belief that policies are created without due deference to the knowledge of people who will be expected to enforce and live with the policies. The implication is that the policies are therefore both inappropriate (because they do not incorporate local realities, opportunities and constraints), and do not enjoy any sense of 'ownership' by the people expected to implement and enact the policies.

Modelling the conversion of information into action

Although knowledge and knowledge management may have become the development imperatives since the 1990s, communication i.e. the two-way movement of knowledge in appropriate forms that encourage learning and action, has remained its rather poorer cousin.

There are many kinds of communications modelling that try to describe the process of turning knowledge into action. One practical tool is the AKAB model developed by the Centre of Communications for Development. The model says that, for people to use knowledge to inform their work, they need to know that the knowledge exists and they need to be able to access it (Awareness). Once they have hold of it, they need to engage with it in a way that results in their increased understanding of the issues in the context of their own work (Knowledge). They need to believe that it contains information that will help them to do their work better (Attitude). And finally, they need to take action that puts the knowledge to work (Behaviour) (Lloyd-Laney et al, 2003).

An effective communication strategy includes components that respond to information need, make knowledge accessible and useful, and use communications tools that allow the user to engage with the knowledge to make it relevant to local circumstances.

How to disseminate

There are many different ways to disseminate information about things like community road safety education projects. Whenever possible dissemintation should be targeted at practitioners or researchers who will find the information most useful. Some possible ways are considered below.

Articles: Most professions have a way of communication with each other. This may take the form of a regular 'newsletter' (which nowadays may be distributed by e-mail), or magazine, which allow projects and programmes to be described – however briefly. The article should include a contact name for those who are particularly interested to follow-up by making personal contact.

Meetings: Many organisations have regular, or annual meetings where people are invited to make presentations - or organise workshops. These can be very effective ways of disseminating information since, typically, all the 'right' people are present.

Workshops: Workshops are a popular way to disseminate information because they can be planned to allow sufficient time to fully cover the material, allow the appropraite people to be invited, and can promote active participation by those attending through open discussions or forums. They can be expensive if not organised in conjunction with other events – for example if travel and the cost of accommodation will be required.

Conferences: Presenting a paper at a national or international conference is a very effective way of getting information into the public domain. However, the subject may not be of interest to all those attending and it can take considerable time (and effort) to identify a suitable conference, submit an abstract and provide a paper and presentation in the approved format.

Journals: Publishing reports in scientific journals will usually provide good dissemination. However, it may be the case that 'practitioners' (those 'on-the–ground') may have limited

access, or time, to keep up to date with journals – which typically cater for more academic persons.

Brochures: It is often a good idea to produce some relatively short (but 'user friendly') brochures or leaflets that can be distributed (by post, hand or at conferences) to interested parties.

Radio and Television: Mass media means that sizeable members of the community can be reached. Local languages and dialects can be used to discuss road safety issues by radio or television and to disseminate best practice.

Training-of-trainers: Many programmes, especially if they are to be sustainable, and grow in terms of coverage, will involve training those involved in delivery. It is important to include provision for 'training-of trainers' (ToT) who can be expected to dissemminate information on the 'what and how' of programmes.

The overall objective of training is to build sustainable capacity in training and dissemination that will help support a national or regional strategy.

Internet: 'Electronic publishing' using the Internet for the purpose of dissemintaion is undoubtedly a rapidly growing phenomenon. The Internet facilitates dissemination to a mass audience, as long as the user is aware of how to access the website. For users it is more beneficial to utilise reputable websites (for example www.grsproadsafety.org and www.transport-links.org), and for providers, it is sensible to advertise the web address widely. Of course, the Internet is restricted to road safety departments and schools that have Internet access and computers, which makes them restricted to more wealthy and centralised government departments. The Internet can be extremely effective when information reaches the right audience, but should not be used in isolation of more mainstream dissemination mechanisms described here. These guidelines provide many examples of useful sites, many of which have links to other sites (refer to Appendix D).

Electronic discussions and email: These are becoming a popular tool to reach stakeholders in developing countries with Internet and email access. They cost less than actually bringing people together in workshops, yet can reach a global constituency and engage people in discussion and dialogue. An e-discussion can serve as an effective tool to complement face-to-face and videoconferencing events. In fact, it can bring together a larger and more diverse group of people than most other learning events, and permits a level of sustained interaction and reflection on the chosen subject that is often not possible with a face-to-face exercise.

Networking: Refers to 'talking' to people to pass on, and to listen about, news and developments. Workshops and seminars are still seen as valuable opportunities to engage in valuable and unique debate, although with inadequate facilitation they can be little more than 'talking shops'. Workshops held as part of larger conferences are increasingly being used as a way of keeping costs under control and increasing networking opportunities (Willard, 2001).

As well as talking to individuals it is sometimes productive to talk to involved groups of people that may be involved in local government, church organisations, education establishments, women's groups, health clinics, etc. All of these can be used as

dissemination channels within the community to disseminate road safety, and other education messages and therefore need to be sensitised and involved.

Involving users in knowledge generation

User engagement is the key to taking communication beyond dissemination. In particular, initiatives such as mapping existing information demand and information use environments, and promoting participative communication for empowerment, will improve communication of research to end users (Hovland, 2003).

There are many forms that user involvement can take, including users helping to define *what* is being researched; helping to shape *how* it is conducted; and playing a role in its communication and uptake. Mechanisms and structures for promoting engagement vary for different user groups and include: involvement of partners in all stages of research including definition of research itself, design of research methodology and involvement in its implementation; identification of key national policy influencers and influencing strategy; continuing dialogue with local government; use of national and regional networks; strategic engagement with media; user group engagement in the water sector; and engagement of users in the application and dissemination of research.

References

Development Gateway: www.developmentgateway.org

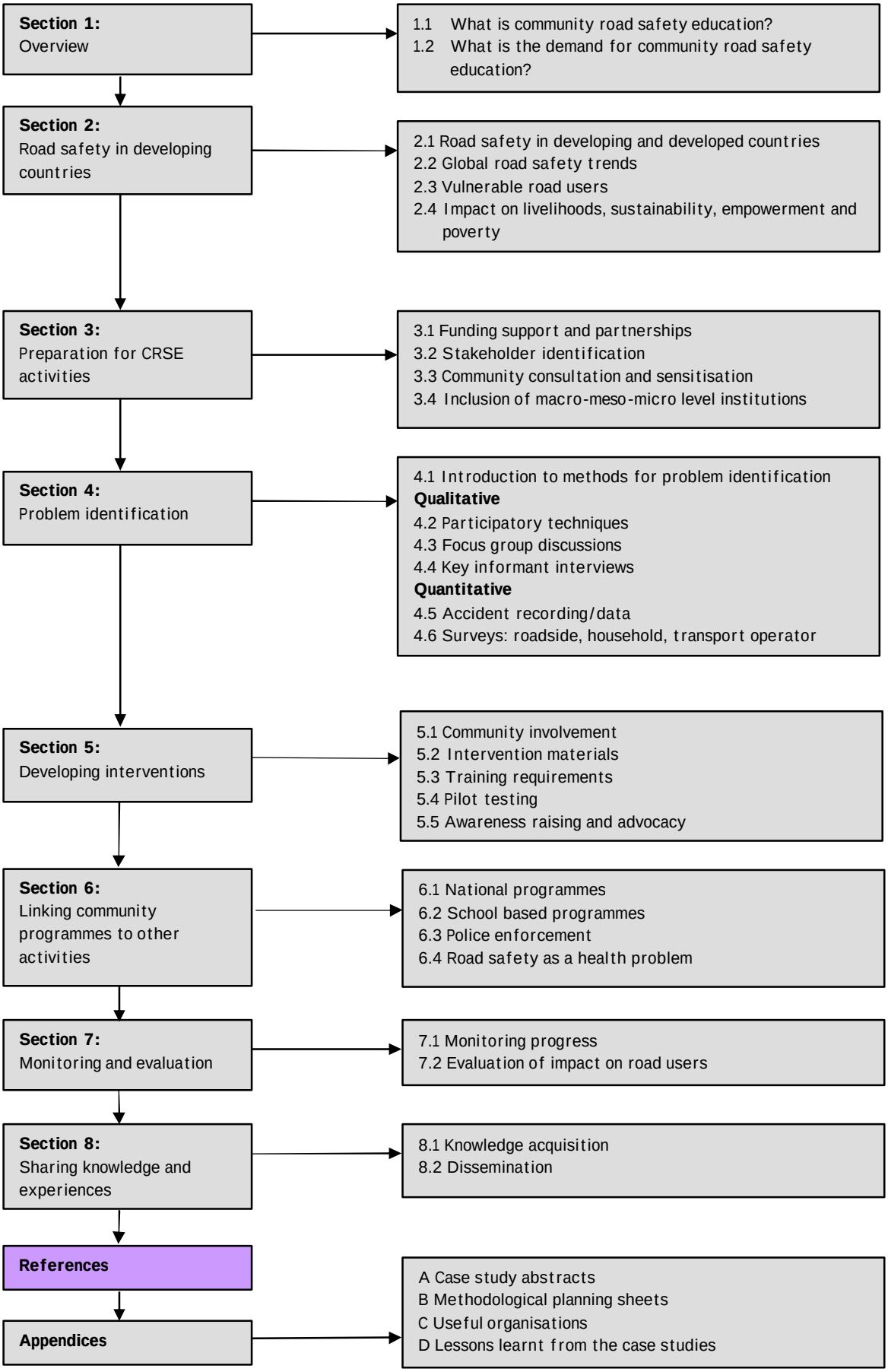
Hovland, I. (2003). Communications of research for poverty reduction: a literature review. London: Overseas Development Institute

Lloyd-Laney, M. Fernando, P. Young, J. (2003). Knowledge demand assessment. Transport and Rural Infrastructure Services Partnership (TRISP)

Transport Links: www.transport-links.org

Willard, T. (2001). Dating the decision-makers: moving from communications to engagement. Manitoba: International Institute for Sustainable Development

Reference Section


Section 1:
Overview
1.1 What is community road safety education?
1.2 What is the demand for community road safety education?
Section 2:
Road safety in developing countries
2.1 Road safety in developing and developed countries
2.2 Global road safety trends
2.3 Vulnerable road users
2.4 Impact on livelihoods, sustainability, empowerment and poverty
Section 3:
Preparation for CRSE activities
3.1 Funding support and partnerships
3.2 Stakeholder identification
3.3 Community consultation and sensitisation
3.4 Inclusion of macro-meso-micro level institutions
Section 4:
Problem identification
4.1 Introduction to methods for problem identification
Qualitative
4.2 Participatory techniques
4.3 Focus group discussions
4.4 Key informant interviews
Quantitative
4.5 Accident recording/data
4.6 Surveys: roadside, household, transport operator
Section 5:
Developing interventions
5.1 Community involvement
5.2 Intervention materials
5.3 Training requirements
5.4 Pilot testing
5.5 Awareness raising and advocacy
Section 6:
Linking community programmes to other activities
6.1 National programmes
6.2 School based programmes
6.3 Police enforcement
6.4 Road safety as a health problem
Section 7:
Monitoring and evaluation
7.1 Monitoring progress
7.2 Evaluation of impact on road users
Section 8:
Sharing knowledge and experiences
8.1 Knowledge acquisition
8.2 Dissemination
References
Appendices
A Case study abstracts
B Methodological planning sheets
C Useful organisations
D Lessons learnt from the case studies

REFERENCE SECTION

Section 1.1: What is Community Road Safety Education?

Cairney, P. (2000). Current status of community road safety in Australia and New Zealand. ARRB Report AP-R 214. Victoria: Australian Road Research Board

Exchange: a networking and learning programme on health communication
www.healthcomms.org

Hoque, M. M. (2000). On creating supportive environments for safe community. Proceedings of the 9th International Conference on Safe Communities. 26-28 February, 2000; Dhaka, Bangladesh

WHO (1999) World health report: making a difference. Geneva: World Health Organization

Section 1.2: What is the Demand for Community Road Safety Education?

Downing, A. J. and Sayer, I. A. (1982). A preliminary study of children's road crossing knowledge in three developing countries. TRRL Supplementary Report 771. Crowthorne: Transport Research Laboratory

Downing, C. S. (1987). The education of children in road safety. Proceedings of the Synopsium, The Healthy community. Child Safety as Part of Health Promotion Activities. Stockholm

Jacobs, G. Aeron-Thomas, A. and Astrop, A. (2000). Estimating global road fatalities. TRL Report 445. Crowthorne: Transport Research Laboratory

Murray, C. and Lopez, A. (1996). The global burden of disease. World Health Organization/Harvard School of Public Health/World Bank

TRL (1997). Overseas road note 17: road safety education in developing countries – guidelines for good practice in primary schools. Crowthorne: Transport Research Laboratory

Section 2.1: Developed vs. Developing Country Practice

Aeron-Thomas, A. Downing, A. J. Jacobs, G. D. Fletcher, J. P. Selby, T. Silcock, D. T. (2002). Review of road safety management practice. TRL Project Report, PR/INT/216/2002. Crowthorne: TRL Limited

Aeron-Thomas, A. (2000), Under-reporting of road traffic casualties in low income countries. TRL Project report, POR/INT/199/00. Crowthorne: TRL Limited

Asian Development Bank (1998) Road safety guidelines for the Asian and pacific region, Manila: Asian Development Bank.

Barker, J. and Baguley, C. J. (2001), A road safety good practice guide (1st ed.). London: Department for Transport, Local Government and the Regions.

Carlsson, G. Gunnar, and Karl-Olov Hedman. (1990). A systematic approach to road safety in developing countries. INU 63, Infrastructure and Urban Development Department. Washington, D. C.: World Bank

Ghee, C. Silcock, D. Astrop, A. and Jacobs, G. (1997). Socio-economic aspects of road accidents in developing countries. TRL Report 247. Crowthorne: Transport Research Laboratory

Jacobs, G. D. Downing, A. J. and Sayer, I. A. (1981). A preliminary study of road user behaviour in developing countries. Supplementary Report 646, Crowthorne: Transport and Road Research Laboratory

Jacobs, G. D. Aeron-Thomas, A. and Astrop, A. (2000). Estimating global road fatalities. TRL Report 445. Crowthorne: TRL Limited

Murray, C. and Lopez, A. (1996). The global burden of disease. World Health Organization/Harvard School of Public Health/World Bank

PIARC (2004). Road safety manual. PIARC: World Road Congress (to be published)

TRL (1995) Overseas road note 10: costing road accidents in developing countries. Crowthorne: Transport Research Laboratory

WHO (1999) World health report: making a difference. Geneva: World Health Organization

WHO (2004). World report on road traffic injury prevention. Geneva: World Health Organization

Section 2.2 Global Road Safety Trends

Jacobs, G.D. and Aeron-Thomas, A. (2000). African road safety review final report. Publication No. FHWA-SA-01-008, US Department of Transportation/Federal Highway Administration

Jacobs, G. D. Aeron-Thomas, A. and Astrop, A. (2000). Estimating global road fatalities. TRL Report 445. Crowthorne: TRL Limited

PIARC (undated). Keep death off your roads.
www.grsproadsafety.org/activities/reports/5/74.pdf

WHO (1999) World health report: making a difference. Geneva: World Health Organization

Section 2.3: Vulnerable Road Users

Aeron-Thomas, A. (2000), Under-reporting of road traffic casualties in low income countries. TRL Project report, POR/INT/199/00. Crowthorne: TRL Limited

Christie, N. (1995). Social, economic and environmental factors in child pedestrian injuries: a literature review. Project Report 116. Crowthorne: Transport Research Laboratory

Christie, N. (1996). The high risk pedestrian: socio-economic and environmental factors in their accidents. Project Report 117. Crowthorne: Transport Research Laboratory

Downing, A. J. and Sayer, I. A. (1982). A preliminary study of children's road crossing knowledge in three developing countries. TRRL Supplementary Report 771. Crowthorne: Transport Research Laboratory

Downing, A. Jacobs, G. Aeron-Thomas, A. Sharples, J. Silcock, D. van Lottum, C. Walker, R. and Ross, A. (2000). Review of road safety in urban areas. PR/INT/200/00. Crowthorne: TRL Limited

Ghee, C. Silcock, D. Astrop, A. and Jacobs, G. (1997). Socio-economic aspects of road accidents in developing countries. TRL Report 247. Crowthorne: Transport Research Laboratory

Jacobs, G. D. Aeron-Thomas, A. and Astrop, A. (2000). Estimating global road fatalities. TRL Report 445. Crowthorne: TRL Limited

Jacobs, G. D. Downing, A. J. and Sayer, I. A. (1981). A preliminary study of road user behaviour in developing countries. Supplementary Report 646, Crowthorne: Transport and Road Research Laboratory

Krug, E. (ed.) (1999). Injury: a leading cause of the global burden of disease. Geneva, World Health Organization

Odero, W. Garner, P. and Zwi, A. (1997). Road traffic injuries in developing countries: a comprehensive review of epidemiological studies. Tropical Medicine and International Health, vol. 2, no. 5, pp: 445-460

PIARC (undated). Keep death off your roads.
www.grsproadsafety.org/activities/reports/5/74.pdf

TRL (1990). Road safety in developing countries. Crowthorne: Transport Research Laboratory

WHO (1999) World health report: making a difference. Geneva: World Health Organization

WHO (2001). A 5-year WHO strategy for road traffic injury prevention. Geneva, World Health Organization

WSAtkins/TRL (1998). Pedestrian accidents vulnerability in developing countries. WS Atkins/TRL Report R6236

Section 2.4: Impact on Livelihoods, Empowerment and Poverty

Barter, P. A. (1999). Transport and urban poverty in Asia: a brief introduction to the key issues. Regional development dialogue/United Nations Centre for Regional Development, 20, no.1: 143-63

Bryceson, D. Maunder, D. A. C. Mbara, T. C. Kibombo, R. Davis, A. S. C. Howe, J. D. G. F. (2003). Sustainable livelihoods, mobility and access needs. TRL Report TRL 544. Crowthorne: TRL Limited

Ghee, C. Silcock, D. Astrop, A. and Jacobs, G. D. (1997). Socio-economic aspects of road accidents in developing countries. TRL Report 247. Crowthorne: Transport Research Laboratory

International Federation of Red Cross and Red Crescent Societies (1998). World disasters report 1998. Oxford University Press

Jacobs, G. and Downing, A. (1982). A study of bus safety in Delhi. TRL Report SR758. Crowthorne: Transport Research Laboratory

Jacobs, G. D. Maunder, D. A. C. Astrop, A. Sayer, I. A. and Downing, A. J. (1999). Transport safety for the urban poor. Unpublished Report PR/INT/154. Crowthorne: TRL Limited

Murray, C. and Lopez, A. (1996). The global burden of disease. World Health Organization/Harvard School of Public Health/World Bank

Ross, A. and Mwiraria, N. (1992). Review of World Bank experience in road safety. World Bank Technical Paper. Washington, D. C.: World Bank

World Bank (1994). World development report: infrastructure for development. Washington, D. C.: World Bank

WHO (1999) World health report: making a difference. Geneva: World Health Organization

Section 3.1: Funding Support and Partnerships

Aeron-Thomas, A. Downing, A. J. Jacobs, G. D. Fletcher, J. P. Selby, T. Silcock, D. T. (2002). Review of road safety management practice. TRL Project Report, PR/INT/216/2002. Crowthorne: TRL Limited

LTSA (2003). Community road safety strategy 2003. Wellington: New Zealand Land Transport Safety Authority

Wetteland, T. and Lundebye, S. (1997). Financing of road safety actions. 3rd African Road Safety Congress. South Africa: Pretoria

Section 3.2: Stakeholder Identification

DFID (2001). Sustainable livelihoods guidance sheets. London: Department for International Development

McCallum, D. (2000). Stakeholder identification and mobilisation. Nairobi: UNCHS (Habitat)

Section 3.3: Community Consultation and Sensitisation

Barwell, I. (1988). Guidelines for remote area transport and socio-economic surveys. Report for the Transport, Communications and Tourism Division, UNESCAP. Ardington: IT Transport

Joachim, T. and Grady, H. M. (1991). Participatory rapid appraisal for community development. London: International Institute for Environment and Development

Mikkelsen, B. (1995). Methods for development work and research: a guide for practitioners. New Delhi: Sage Publications

Pretty, J. N. Guijt, I. Thompson, J. and Scoones, I. (1995). A Trainer's Guide for Participatory Learning and Action. London: International Institute for Environment and Development.

Schwartz, N. and Deruyttere, A. (1996). Community consultation, sustainable development and the Inter-American Development Bank. Washington D.C: Inter-American Development Bank

Wattam, M. (1998). Community participation in rural transport infrastructure. Ardington: IT Transport Ltd

Section 3.4: Inclusion of Macro-Meso-Micro Level Institutions

Goldman, I. (2000). Micro to macro: policies and institutions for empowering the rural poor. South Africa: Khanya

Jacobs, G. D. Maunder, D. A. C. Astrop, A. Sayer, I. A. and Downing, A. J. (1999). Transport safety for the urban poor. TRL Unpublished Report PR/INT/154. Crowthorne: TRL Limited

Ullah Jan, A. (undated). How to develop meso-level, representative institutions. Pakistan: Integrated Regional Support Programme

Section 4.1: Introduction to Methods

DFID (2001). Sustainable livelihoods guidance sheets. London: Department for International Development

Ellis, F. (2000). Rural livelihoods and diversity in developing countries. Oxford University Press

Section 4.2: Participatory Techniques

ActionAid (1992). From input to impact: participatory rural appraisal for ActionAid the Gambia.

CIDT (2001). Participatory learning and action, training course. Walsall: Centre for International Development and Training, June 2001

Davis, A. (ed.) (2001). Participatory rural appraisal. The Rural Transport Knowledge Base. Crowthorne: TRL Limited. www.transport-links.org/knowledgebase.htm

Institute for Development Studies (1996). The power of participation: PRA and policy. Policy Briefing, Issue 7; August 1996. Brighton: Institute of Development Studies

Joachim, T. and Grady, H. M. (1991). Participatory rapid appraisal for community development. London: International Institute for Environment and Development

Mikkelsen, B. (1995). Methods for development work and research: a guide for practitioners. New Delhi: Sage Publications

National Environmental Secretariat (1990). Participatory rural appraisal handbook, conducting PRA in Kenya. Nairobi: Natural Resources Management Support Series No. 1

Pretty, J. N. Guijt, I. Thompson, J. Scoones, I. (1995). Participatory learning and action: a trainers guide. London: International Institute for Environment and Development.

Vermaak, L. (1998). Participatory road safety educational technologies (PET): a community driven approach. Proceedings of the South African Transport Conference. September, 1998. Pretoria

Vermaak, L. (1999). Community driven traffic safety: an action research approach. Master of Arts in Social Science, University of South Africa

Vermaak, L. (2000). Children moving road safety technology into the future: school participatory educational technologies. Proceedings of the 9th International Conference on Safe Communities. 26-28 February, 2000. Dhaka, Bangladesh

Section 4.3: Focus Group Discussions

Academy for Educational Development and Education Development Center (2004). www2.edc.org/NTP/focusgroups.htm

Edmunds, H. (2000). Focus group research handbook. McGraw-Hill Contemporary Books

Krueger, R. A. and Casey, M. A. (2000). Focus groups: a practical guide for applied research. Sage Publications

Krueger, R. A. (1997). Analyzing and reporting focus group results. Sage Publications

Krueger, R. A. (1997). Developing questions for focus groups. Sage Publications

Morgan, D. L. (1997). Planning focus groups. Sage Publications

Section 4.4: Key Informant Interviews

Davis, A. (ed.) (2001). Participatory rural appraisal. The Rural Transport Knowledge Base. Crowthorne: TRL Limited. www.transport-links.org/knowledgebase.htm

Mikkelsen, B. (1995). Methods for development work and research: a guide for practitioners. New Delhi: Sage Publications

Wengraf, T. (2001). Qualitative research interviewing: semi-structured, biographical and narrative methods. Sage Publications

World Bank qualitative methods and techniques:
www.worldbank.org/poverty/impact/methods/qualitative.htm

Section 4.5: Accident Recording/Data

Asian Development Bank (1998). Road safety guidelines for the Asian and Pacific region: Road accident data systems. Manila: Asian Development Bank

IHT (1990). Guidelines for the safety audit of highways. London: The Institute of Highways and Transportation

Jacobs, G. Bardsley, M. N. and Sayer, I. (1975). Road accident data collection and analysis in developing countries. TRRL Report LR676. Crowthorne: Transport and Road Research Laboratory

ROSPA (1992). Road safety engineering manual. Birmingham: Royal Society for the Prevention of Accidents

TRL (1991). Towards safer roads in developing countries. Crowthorne: Transport Research Laboratory

TRL (2001). Rural transport safety strategy. The Rural Transport Knowledge Base. Crowthorne: TRL Limited. www.transport-links.org/knowledgebase.htm

Section 4.6: Roadside Surveys

Fouracre, P. (2001). Rural transport survey techniques. The Rural Transport Knowledge Base. Crowthorne: TRL Limited. www.transport-links.org/knowledgebase.htm

TRL (2002). Rural transport operator surveys. The Policy Toolkit for Increased Rural Mobility. Crowthorne: TRL Limited. www.transport-links.org/policytoolkit.htm

TRL (2004). Overseas Road Note 40: A guide to axle load surveys and traffic counts for determining traffic loading on pavements. Crowthorne: TRL Limited

Section 5.1: Community Involvement

Burkey, S. (1993). People first: a guide to self-reliant, participatory rural development. London: Zed Books

New Zealand Land Transport Safety Authority (2003) www.ltsa.govt.nz/crsp/community-rd-safe-strat-2003.html

Vermaak, L. (1998). Participatory road safety educational technologies (PET): a community driven approach. Proceedings of the South African Transport Conference. September 1998; Pretoria, South Africa

Section 5.2: Intervention Materials

Downing, A. and Sayer, I. (1982). A preliminary study of children's road crossing knowledge in three developing countries. TRRL Supplementary Report 771. Crowthorne: Transport and Road Research Laboratory

Leburu, F. M. (1990). Training the children: traffic education in Botswana. Proceedings of the International Conference for Road Safety and Accidents in Developing Countries. Cairo: The Academy of Scientific Research and Technology

Sayer, I. A. Palmer, C. J. Murray, G. and Guy, J. (1997). Improving road safety education in developing countries: Ghana. TRL Report 265. Crowthorne: Transport Research Laboratory

Stuart, N. S. and Maxwell, C. H. (1996) Mass Media Publicity as Support for Police Enforcement in Victoria. Proceedings of the 3rd World Conference on Injury Prevention and Control, Melbourne, Australia

TRL (1991). Towards safer roads in developing countries: a guide for planners and engineers. Crowthorne: Transport Research Laboratory

Vermaak, L. (1998). Participatory road safety educational technologies (PET): a community driven approach. Proceedings of the South African Transport Conference. September 1998; Pretoria, South Africa

Section 5.3: Training Requirements

DETR (2001). Community approach to road safety education. London: Department of the Environment, Transport and the Regions

Rothengatter, J. (1981). Traffic safety education for young children. Lisse: Swets and Reitlinger

Section 5.4: Pilot Testing

ASA (1997). How to conduct pretesting: section on survey research methods. Alexandria: American Statistical Association

Oksenberg, L. Cannell, C. and Kalton, G. (1991). New strategies for pretesting survey questions. Journal of Official Statistics, 7 (3), 349-365

Presser, S. and Blair, J. (1994). Survey pretesting: do different methods produce different results? Sociological Methodology 24

Schwarz, N. and Sudman, S. (eds.) (1995). Answering questions: methodology for determining cognitive and communicative processes in survey research. San Francisco: Jossey-Bass Publishers

Section 5.5: Awareness Raising and Advocacy

IFRTD (1999). Balancing the load. Proceedings of the Asia and Africa Regional Seminars on Gender and Rural Transport. June and July 1999

Section 6.1: National Programmes

Aeron-Thomas, A. Downing, A. J. Jacobs, G. D. Fletcher, J. P. Selby, T. Silcock, D. T. (2002). Review of road safety management practice. TRL Project Report, PR/INT/216/2002. Crowthorne: TRL Limited

Cairney, P. (2000). Current status of community road safety in Australia and New Zealand. ARRB Transport Research

Downing, A. J. and Sayer, I. A. (1982). A preliminary study of children's road crossing knowledge in three developing countries. TRRL Supplementary Report 771. Crowthorne: Transport Research Laboratory

TRL (1991). Towards safer roads in developing countries: a guide for planners and engineers. Crowthorne: Transport Research Laboratory

TRL (1997). Overseas road note 17: road safety education in developing countries – guidelines for good practice in primary schools. Crowthorne: TRL Limited

Section 6.2: School Based Programmes

Ampofo-Boateng, K. (1987). Children's perception of safety and danger on the road. University of Strathclyde: Unpublished doctoral dissertation

Ampofo-Boateng, K. and Thomson, J. A. (1990). Child pedestrian accidents: a case for preventative medicine. Health Education Research Vol. 5, No 2 pp 265-74

Child-to-Child Trust. www.child-to-child.org

Christie, N. (1996). The high risk child pedestrian: socio-economic and environmental factors in their accidents. Project Report PR 117. Crowthorne: Transport Research Laboratory

DETR (1999a). On the safe side – a good practice guide to road safety education in primary schools. London: The Department of the Environment, Transport and the Regions

DETR (1999b). On the safe side – a good practice guide to road safety education in secondary schools. London, The Department of the Environment, Transport and the Regions

Downing, A. J. and Sayer, I. A. (1982). A preliminary study of children's road-crossing knowledge in three developing countries. TRRL Supplementary Report 771, Transport Research Laboratory, Crowthorne

Ghee, C. Silcock, D. Astrop, A. and Jacobs, G. (1997), Socio-economic aspects of road accidents in developing countries. TRL Report 247. Crowthorne: Transport Research Laboratory

Harland, G. Davies, G. Clayton, A. and Platt, V. (1998), What road safety officers were doing in 1996. TRL report number 343. Crowthorne: Transport research Laboratory

Harland, D. G. Murray, G. and Tucker, S. (1991). Road safety education: making safe connections. In Safety 91 Papers on Vehicle Safety, Traffic Safety and Road User Safety Research. Crowthorne: Transport Research Laboratory

Molen, H. H. (1981). Child pedestrian's exposure, accidents and behaviour. Accident Analysis and Prevention, 13, 193-224

Quimby, A. (2000). The British council in-country training programme (Uganda): road safety education. DFID Projects in Uganda Report Number 63. Kampala: British Council

Rothengatter, T. (1981). Traffic safety education for young children. Lisse: Swets and Reitlinger

Rothengatter, T. (1984). A behavioural approach to improving traffic behaviour of young children. Ergonomics, 27, 147-160

Sayer, I. and Downing, A. (1982). A preliminary study of children's road-crossing knowledge in three developing countries. TRRL Supplementary Report 771. Crowthorne: Transport Research Laboratory

Sayer, I. A. Palmer, C. J. Murray, G. and Guy, J. (1997). Improving road safety education in developing countries: Ghana. TRL Report 265. Crowthorne: Transport Research Laboratory

Sayer, I. A. Quimby, A. Murray, G. and Guy, J. (2000). Improving road safety education in developing countries: India. TRL Report 442. Crowthorne: Transport Research Laboratory

Thomson, J. A. (1991). The facts about child pedestrian accidents. London: Cassell

Thomson, J. A. Tolmie, A. Foot, H. C. McLaren, B. (1996). Child development and the aims of road safety education: a review and analysis. London: The Stationery Office; Road Safety Research Report No 1

TRL (1997). Overseas road note 17: road safety education in developing countries – guidelines for good practice in primary schools. Crowthorne: TRL Limited

Section 6.3: Police Enforcement

Cairney, P. (2000). Current status of community road safety in Australia and New Zealand. ARRB Transport Research

Gaber, M. and Yerrel, J. (1983). Road safety in Egypt. In IAATM 9th International Conference. International Association for Accidents and Traffic Medicine

Hoque, M. M. (2000). On creating supportive environments for safe community. Proceedings of the 9th International Conference on Safe Communities. 26-28 February, 2000; Dhaka, Bangladesh

Mercer, C. (1985). The relationship driving while impaired charges, police drink driving, road-check activity, media coverage and alcohol related casualty traffic accidents. Accident Analysis and Prevention, 17 (6)

TRL (1991). Towards safer roads in developing countries: a guide for planners and engineers. Crowthorne: Transport Research Laboratory

World Bank (2002). Road Safety. www.worldbank.org/transport/roads/safety.htm

Section 6.4: Road Safety as a Health Problem

Adam, G. and Harford, N. (2000). The essential handbook. radio and HIV/AIDS: making a difference. A guide for radio practitioners, health workers and donors. Geneva: UNAIDS

AMREF. (1998). Health project management guide: participatory project planning, project implementation and evaluation. Revised edition. Nairobi: AMREF. www.amref.org

The Child-to-Child Trust: www.child-to-child.org

The Communication Initiative: www.comminit.com

Elfituri, A. A. Elmahaishi, M. S. and MacDonald, T. H. (1999). Role of health education programmes within the Libyan community. Eastern Mediterranean Health Journal, Volume 5, Issue 2, pp.268-276

Elwood, W. N. (ed.) (1999). Power in the blood: a handbook on AIDS, politics and communication. London: Lawrence Evlbaum Associates

Exchange: a networking and learning programme on health communication: www.healthcomms.org

Health Link World-Wide: www.healthlink.org.uk

Institute for Development Studies (1996). Policy Briefing, Issue 7; August 1996.

The International Development Research Centre: www.idrc.ca

Nyamwaya, D. and Akumu, P. (1986). A guide to health education in water and sanitation programmes. Nairobi: AMREF

TALC: Teaching Aids at Low Cost: www.talcuk.org

UNAIDS (1999). Peer education and HIV/AIDS: Concepts, uses and challenges (Best Practice- Key Material). Geneva: UNAIDS

UNAIDS (1999). Social marketing: an effective tool in the global response to HIV/AIDS. Geneva: UNAIDS

Wates, N. (1999). The community planning handbook. London: Earthscan

WHO (2004). World report on road traffic injury prevention. Washington D.C: World Bank

World Health Organization: www.who.int

Section 7.1: Monitoring Progress

Abbott, J. and Guijt, I. (1998). Changing views on change: participatory approaches to monitoring the environment. SARL Discussion Paper No.2. London: IIED.

Ashley, C. and Hussein, K. (2000). Developing methodologies for livelihood impact assessment. Working Paper 129. London: Overseas Development Institute.

Estrella, M. et al (2000). Learning from Change: Issues and experiences in participatory monitoring and evaluation. London: Intermediate Technology Publications

Estrella, M. and Gaventa, J. (1998) Who counts reality? participatory monitoring and evaluation: a literature review. IDS Working Paper 70. Brighton: Institute of Development Studies

Hussein, K. (2000). Monitoring and evaluation impact on livelihoods: lessons from experience. London: Overseas Development Institute

IDS (1998). Participatory monitoring & evaluation: learning from change. IDS Policy Briefing, Issue 12. Brighton: Institute of Development Studies

IFAD (2002). A guide for project monitoring and evaluation: managing for impact in rural development. Rome: International Fund for Agricultural Development

Pasteur, K. (2001). Tools for sustainable livelihoods: monitoring and evaluation. Brighton: Institute of Development Studies

Pasteur, K. and Blauert, J. (2000). Participatory monitoring and evaluation in Latin America. Brighton: Institute of Development Studies

Rietbergen-McCracken, J. and Narayan, D. (1998). Participation and social assessment: module VI – participatory tools and techniques: a resource kit for participation and social analysis. Washington D.C.: World Bank

Turton, C. (2001). Livelihood monitoring and evaluation: improving the impact and relevance of development interventions. Crewkerne: In Development Ltd

World Bank (2002). Road Safety. www.worldbank.org/transport/roads/safety.htm

World Bank (2001). Monitoring and evaluation. poverty reduction strategy sourcebook, Washington D.C.: World Bank. www.worldbank.org/poverty/strategies/sourcons.htm

Section 7.2: Evaluation the Impact on Road Users

Capeling-Alakija, S. Lopes, C. Benbouali, A. and Diallo, D. (eds.) (1997). Who are the question-makers? a participatory evaluation handbook. New York: United Nations Development Programme

Clarke, A. and Dawson, R. (1999). Evaluation research: an introduction to principles, methods and practice. London: Sage

Florey, C. (1993). Sample size for beginners. British Medical Journal, 306: 1181-4

Greig, A. and Taylor, J. (1999) Doing research with children. London: Sage

Hussein, K. (2000). Monitoring and evaluation impact on livelihoods: lessons from experience. London: Overseas Development Institute

Jenkins, G.P. (1999). Evaluation of stakeholder impacts in cost-benefit analysis. Impact assessment and project appraisal. Vol. 17, No. 2

Kalton, G. (1983) Introduction to survey sampling. Series: Quantitative applications in the Social Sciences, No. 35, Thousand Oaks, CA.: Sage Publications

McNeish, D. and Downie, A. (2002) Evaluation toolkit: a practical guide to project evaluation. Available from Banardos and Leeds Health Action Zone

Patton, M. Q. (1986) Utilization-focused evaluation (2nd ed.). Newbury Park, CA: Sage

Pawson, R. and Myhill, A (2001) Learning lessons: enhancing evaluation through research review, TRL report 507. Crowthorne: TRL Limited

Riddell, R. (1997). Searching for impact and methods: NGO evaluation synthesis study. Ministry for Foreign Affairs, Department for International Development Cooperation

Thompson, N.J. and McClintock, H.O., (1998) Demonstrating your program's worth: A primer on evaluation for programs to prevent unintentional injury. Atlanta, Georgia: National Center for Injury Prevention and Control

de Vaus, D.A. (1996) Surveys in Social Research (4th ed.). London: UCL Press

Section 8.1: Knowledge Acquisition

Barua, D.P. and Barua, P.C. (2000). Role of media in promoting safe communities. Proceedings of the 9th International Conference on Safe Communities. 26-28 February, 2000; Dhaka, Bangladesh

ERRM (1995). Road safety component of the road maintenance project: outline of proposed road safety education input. Unpublished technical report. Uganda: Eastern Region Roads Maintenance

Global Road Safety Partnership: www.grsproadsafety.org

Hoque, M. M. (2000). On creating supportive environments for safe community. Proceedings of the 9th International Conference on Safe Communities. 26-28 February, 2000; Dhaka, Bangladesh

Moller, G. (1999). Millicent: myth or miracle. community evaluation report for the SE and SA division of general practice and the Wattle range road safety committee

Svanström, L. (2000). Safe communities: successes and pitfalls in the program development and evaluation. Proceedings of the 9th International Conference on Safe Communities. 26-28 February, 2000; Dhaka, Bangladesh

Section 8.2: Dissemination

The Communication Initiative: www.comminit.com

Development Gateway: www.developmentgateway.org

Hovland, I. (2003). Communications of research for poverty reduction: a literature review. London: Overseas Development Institute

Lloyd-Laney, M. Fernando, P. Young, J. (2003). Knowledge demand assessment. Transport and Rural Infrastructure Services Partnership (TRISP)

Willard, T. (2001). Dating the decision-makers: moving from communications to engagement. Manitoba: International Institute for Sustainable Development

World Bank Development Communications:
www.worldbank.org/developmentcommunications/index.htm

Appendix A2: Case Study Abstract – Betila Community, Bangladesh

BBS (2000). Statistical yearbook of Bangladesh (21st ed.). Dhaka: Bangladesh Bureau of Statistics

Khan, M. A. R. (2004). Prevention of road traffic accident in Bangladesh: current practices. Paper presented in the 2nd Asian Regional Conference on Safe Communities 1st Bangladesh Conference on Injury Prevention. 15-17 February 2004, Institute of Child and Mother Health, Matuail, Dhaka, Bangladesh

NRSSAP (2002-2004). National road safety strategic action plan. Bangladesh: National Road Safety Council, Ministry of Communications

NRTAR (2002). National road traffic accident report. Bangladesh: Bangladesh Road Transport Authority, Ministry of Communications

Rahman, A. K. Fazlur, M. (2003). Community road safety programme: a set in agenda in safe community approach: implications for Bangladesh. Proceedings of the National Workshop on Road Safety Management in Bangladesh, April 16-17, 2003. Dhaka: Accident Research Centre, Bangladesh University of Science & Technology

Appendix A4: Case Study Abstract – Ashaiman Community, Ghana

IBIS (2003). Baseline report on local government, civil society and private sector organisations and activities in Ashaiman. Ghana: Institute for Democratic Governance and IBIS

Appendix B1: Example of a Logical Framework for Monitoring and Evaluating Road Safety Education and Publicity

World Bank (2002). Road Safety. www.worldbank.org/transport/roads/safety.htm

Appendix A1: Case Study – Nuvem Community, India

This case study in India was conducted in conjunction with the Institute of Road Traffic Education (IRTE). This was formed in 1991 by an inter-disciplinary group of members drawn from the police, doctors, journalists, engineers, teachers, ex-servicemen, architects and automobile experts etc. The Vision of IRTE is to create a positive attitude towards road culture in Indian society. IRTE aims to improve road safety education through driver training, traffic engineering, and road user awareness.

India has a vast network of roads. The total length of road network is approximately 3 million kilometres. Of these, National Highways and State Highways account for nearly 2% and 6% of the total road network respectively. There are approximately 85,000 road traffic accident deaths each year in India, 50% of which occur on the highways. These also carry about 70% of total traffic volume.

The road sector is currently being expanded with the launch of ambitious highway construction programmes, for example the Golden Quadrilateral connecting Delhi, Mumbai, Chennai and Kolkata, North-South and East-West corridors. Under these schemes the existing network is being improved by widening and adding lanes, improvement of the road alignment and providing better road surfaces.

Due to higher speeds on better quality roads, the improvement of highways may increase certain types of accidents among high risk road users like pedestrians, cyclists and two-wheeled motorised vehicles. These vulnerable road users already comprise a large proportion of road accident fatalities, accounting for over 70% of victims.

India is predominantly a rural country. One can find villages located along national and state highways as well as on other categories of roads. Many highways pass through villages where a host of activities on either side of the highway tend to take place, giving rise to hazardous situations and sometimes serious accidents, involving villagers. Hence, there was perceived to be a demand for educational and awareness programmes in villages that highways pass through, to increase the level of road safety 'literacy'.

Nuvem Village

Nuvem village is situated on National Highway 17 near Margao in the State of Goa. The village has 1,600 households and a population of 8,500. National Highway 17 passes through Nuvem for a distance of 3.4km and is a highly accident prone stretch of road due to the density of population and heavy traffic volume passing through it; although part of the national highway of Nuvem, it consists of a narrow two lane road with few facilities for pedestrians or stopping buses. Table A1 indicates the number of reported traffic accidents for 2000 to 2002.

Table A1: Reported traffic accidents in Nuvem, 2000-2002

Number of accidents per month													
Month/year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average
2000	3	2	7	2	2	2	2	1	2	1	1	10	2.9
2001	5	3	3	2	4	1	5	6	2	1	7	1	3.3
2002	5	5	5	6	6	4	5	8	3	8	9	4	5.7

Source: Traffic Police, Margao

During this period, 23% of accidents in Nuvem were reported to occur among the 21-25 year age group, with 21% in the 15-20 age group. Hence the target stakeholders of the Nuvem road safety education programme were the youth in the community who were deemed to have the highest risk of involvement in road traffic accidents.

The speed restriction along the stretch of road passing through Nuvem is 40km/h, although vehicle speeds had been recorded as high as 71km/h in field surveys. This is reflected in the top ten causes of accidents in Nuvem, being attributed by the community to:

1. High speeds of vehicles
2. Negligent driving
3. Pedestrians crossing where there is no formal crossing point on the road
4. Multiple passengers on two wheelers
5. Two wheelers carrying goods
6. Drink driving
7. Talking on the cell phone while riding and driving
8. Driving on the wrong side of the road
9. Jaywalking on the roads
10. Parking illegally on the road

Other factors relating to the road geometry at Nuvem were found to exacerbate the incidence of road traffic accidents:

1. Absence of clear sight at the junction near the church
2. Insufficient turning radius
3. Absence of road furniture such as road markings, signage etc
4. No separate provision of bus stops
5. Staggered junctions
6. Inadequate shoulders along carriageway

The aims of the road safety education programme in Nuvem were therefore to:

1. Make the local population aware of the hazards associated with the road traffic passing through Nuvem and how to deal with them
2. Advocating a sense of responsibility among the villagers and teaching them how to be defensive road users
3. Creating a partnership linkage between the citizens and authorities in promoting road safety
4. Providing support by way of tools and systems in promoting road safety education and training in institutions and schools
5. To assist the civil authorities in improving the road infrastructure to complement road safety education in safe road use

Case Study Approach and Methodology

The initial decision to work in Goa was made because the State Government recognised the need to improve it's road safety record and had recently supported the opening of the second IRTE institute in Panaji, Goa. Nuvem was selected as a field survey site because of its population size. Through observation, it also became clear that there were serious safety problems along the highway passing through Nuvem, many of which

were considered behavioural and hence amenable to change by means of education. One particular junction (an off-set crossroads) at the centre of the village appeared to be particularly dangerous. Lastly, an analysis of road traffic accident data showed that Nuvem has a serious and worsening accident problem. Key members of the community, for example, the panchayat (local government), schools and the church were also enthusiastic about the project and were prepared to co-operate and support it.

In addition to a preliminary analysis of accidents, the community itself was consulted about the road safety problems in Nuvem, and the community prioritised particular issues they wanted to address through a consultation process involving a series of meetings with key informants and focus group discussions.

The specific objectives of the study were to develop:

- A ten minute video film – which highlights the village of Nuvem, the problems and hazards of traffic passing on National Highway 17, road user behaviour and deficiencies in road infrastructure
- Printed leaflets developed by IRTE (4,000 leaflets were distributed in Nuvem):
  - In English and Konkani on safety tips for pedestrians, cyclists and two wheeler riders
  - A road sign chart with meanings in English, Hindi and Konkani
  - Alcohol and its effect on driving ability
- Programmes on road safety education in schools and colleges in Nuvem
- Safety programmes including plays, video screening and first aid demonstrations
- Passing safety advice through the church
- Educating and enforcing driver behaviour among traffic on the highway, with the assistance of traffic police, 'interceptors' and student traffic volunteers
- Educating the two-wheeler taxi riders of Nuvem
- A two-day programme training school teachers using a 'School Conclave on Road Safety' resource to help build a continuous training programme on road safety in local schools

In addition, a number of small-scale engineering improvements were requested to accompany the RSE programme by the Ministry of Transport and Ministry of Rural Affairs in Goa, and these were identified and designed by IRTE transport engineers in conjunction with selected members of the community.

The case study was evaluated in three ways:

1. An analysis of accident numbers before and after the programme
2. A survey of Nuvem's road users
3. A behavioural analysis using video film of traffic conditions and road user behaviour before and after the education and engineering interventions

It was found that there was a 43% reduction in the number of reported accidents in the three months following the programme, compared to the three month average of the previous three years. The community was also very supportive of the programme and positive about how it had improved awareness and behaviour.

Appendix A2: Case Study – Betila Community, Bangladesh

The case study in Bangladesh was conducted in conjunction with the Bangladesh Rural Advancement Committee (BRAC), a leading NGO. It was undertaken at Betila from June 2003 to February 2004.

In Bangladesh, the most densely populated country in the world with 123.1 million and 834 persons per km^2 (BBS, 2000), road transportation is an extremely important part of the economy. Around 12% of GDP and 20% of the annual development budget is spent on transport, and 9.4% of national employment is in the transport sector. Road accident fatalities are increasing with the rapid expansion of population, urbanisation, motorisation and inadequate provision for road safety. Today, there are over 0.70 million registered motor and 1.5 million non-motorised vehicles in Bangladesh (NRSSAP, 2002).

Bangladesh has one of the highest road accident fatality rates in the world (73 deaths per ten thousand registered motor vehicles every year, compared with a rate of around 5 fatalities or less per 10,000 vehicles found in developed countries) (NRSSAP, 2002-2004). It is estimated that about 4,000 people are killed and another 4,000 are injured in road accidents every year. However, data constraints and widespread under-reporting of accidents prevents a proper understanding of the real magnitude of the road accident problem (Rahman, 2003). National financial loss due to road accidents is estimated to be about 15 billion taka (US$ 300 million) every year (NRTA, 2002). The major victims of all accident casualties are usually pedestrians (53%) which often rises up to 70%, and one third of the victims are adult males aged between 21-40 years (NRSSAP, 2002-2004; Khan, 2004).

This case study report describes a community action research programme in which the people of Betila Ward in a typical rural area of Bangladesh played the key role in identifying local road safety problems, then participated in designing and implementing possible countermeasures. The research is based on empirical observation, investigation (questionnaire survey) and focus group discussion (FGD) exercises with different segments of the community and an analysis of accident casualty records. A 'before and after intervention' evaluation process has been applied to see the impact of interventions in improving local road users' knowledge and behaviour.

Case Study Site Selection

Local knowledge and contacts were used to identify a suitable community for executing this project. The following criteria were prepared to identify a feasible community for the study:

- A rural community beside a national or regional highway
- Road accident casualties occur repeatedly
- Accident data is available and indicates a treatable problem
- Community willing to participate in road safety measures
- Presence of large trip generators like school, hospital, market, factories etc
- Low-income rural residents
- NGOs and CBOs experienced in participatory approaches are available
- Involvement of women in development activities
- Active representative of local government institutions
- BRAC interventions available

Betila, which is situated about 40 km from Dhaka, a village of Betila-Mitara Union Parishad of Sadar Upazilla-Manikganj District was finally selected as being the most feasible case study site. It is a typical rural Bangladeshi village, which is situated on the Dhaka-Singair-Manikganj road that is characterised by too many road bends, broken surfaces and bridges with steep gradients, roadside canals and ditches, and without any pedestrian facilities. This road is encroached by roadside residents and shopkeepers, and is used for storing and keeping straw, goods and cattle. Motorised vehicles like mini-buses, trucks, tempos and motorcycles ply on this road in addition to non-motorised traffic including rickshaws, rickshaw vans, bicycles and animal-driven vehicles.

Case Study Approach and Methodology

The specific objectives of the study were to:

- Empower local people, with an emphasis on women and poor people by enhancing their personal capacity to foster responsible attitudes and good practice in road use. These goals were achieved by participating in the identification, prioritisation, planning, designing and implementation of road safety initiatives
- Raise awareness and bring about positive changes in knowledge, attitude and behaviour of road users through community based interventions and using local resources and networks
- Enhance responsible attitudes and appropriate behaviour for their own safety and safety of others on the road
- Find sustainable and replicable road safety education programmes, tools or interventions
- Develop community ownership.

Table A2 describes the data collection methods used during the study:

Table A2: A brief summary of data collection tools

Nature of data	Tools used	Materials used	People Covered	Objectives
Qualitative	Observation	Checklist	▪ Pedestrians	▪ Pedestrians actual walking and crossing behaviour on road
	Focus Group Discussion	Checklist	Children, parents, pedestrians, passengers, drivers, school teachers, community leaders, local businessmen	▪ Opinions on road safety problems & countermeasures ▪ Knowledge of road vocabulary ▪ Safe & unsafe places for road users ▪ Road use patterns
	Case study	Checklist	▪ Local accident victims	▪ Details of accident information
Quantitative	Individual survey	Semi-structured questionnaire	Children, Pedestrians Passengers, Drivers, School teachers, Community leaders	▪ Knowledge on safe use of road ▪ Local road safety problems & Countermeasures
	Household screening survey	Semi-structured questionnaire	▪ All households	▪ Demographic characteristics of Betila people ▪ Accident information
	Accident statistics	Police reports	▪ Local accident victims	▪ Accident information

The project cycle was divided into four phases: preparatory, development, implementation and dissemination. A 'before and after intervention' evaluation process was applied to assess the impact of the project interventions in improving knowledge and behaviour of road use practices in the community under study.

Case Study Findings

The survey, undertaken to establish the cause and effect of road traffic accidents including narrow roads and road junctions, absence of pedestrian facilities, too many bends and sloping bridges, revealed that a total of 125 persons were victims of road accidents between 2001 and September 2003. Figure A3 reveals that road traffic accidents among Betila people are increasing alarmingly. It was noted that 3 people were killed by road accidents at or near Betila intersection during the last two years but only one of those incidents was reported to the police.

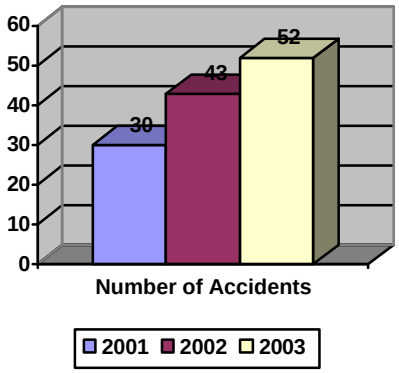


Figure A3: Total accident casualties in Betila (2001-2003)

Table A3 shows that the proportion of pedestrians involved in collisions (33%) was higher than any other type of collision during 2001-2003. Collisions between non-motorised and motorised vehicles appeared to be high as well.

Table A3: Accident collision type among Betila people

Collision type	Number of accidents by year			Total
	2001	2002	2003	
Hit Pedestrian	10	18	12	**41 (33%)**
Between non-motorised and motorised vehicles	3	11	13	**27 (21%)**
Self accident	5	4	11	**21 (17%)**
Between motorised vehicles	6	5	4	**15 (12%)**
Between non-motorised vehicles	3	3	6	**12 (10%)**
As passenger	2	1	3	**6 (5%)**
Hit animal	1	1	2	**2 (1.5%)**
Hit road side tree	0	0	1	**1 (.5%)**
Total	**30**	**43**	**52**	**125 (100%)**

All respondents (including children and pedestrians) reported to the interviewers that they just see if any vehicles are coming and then cross the road. A notable number of respondents reported to have crossed the road without even looking, whereas, only about a quarter of respondents stop and look while crossing the road. This indicates that local pedestrians are very vulnerable road users, as they don't follow safe crossing rules, such as stopping at safe places, looking in both directions of the road, listening for the sound of oncoming vehicles etc. The findings also reveal that people have no knowledge about safe crossing rules.

Road Traffic Accidents: Cause and Effects

Respondents identified many factors as the cause of accidents. The foremost cause, as visualised by the respondents, was related to the design and absence of regular maintenance of roads and bridges and the absence of pedestrian facilities. In Table A4 it is observed that over-speeding, overloading, drink driving and overlooking traffic rules by drivers are the major causes of road accidents. Respondents also mentioned that improper use of the road and roadsides for drying and keeping goods, straw and keeping cattle are often a cause of accidents.

Table A4: Local road safety problems at a glance

Problems in road design		Narrow road
		Absence of road markings and signs
		Insufficient space at junctions, bus stations
Poorly maintained road		Broken road surfaces and broken bridges
		Broken road and roadsides
Inadequate options for pedestrians		Hawkers, shopkeepers and rickshaw drivers obstructing road sides
		Insufficient walking space at road sides
		No footpath
Behaviour	Pedestrian behaviour	Lack of knowledge on walking and crossing rules
		Gossiping/sitting /lying/sleeping on road and roadsides
		Children playing /running on road/roadsides
	Improper use of road	Allowing domestic animals on road/roadsides
		Drying straw/storing goods/dumping waste
		Roadside shops, tree/bamboo/bushes/tree plantations
	Passengers behaviour	Lack of awareness about using vehicle, getting down from running vehicle, pressure on driver for speedy driving
	Driver's behaviour	Reckless/over speeding/dangerous overtaking/learner drivers displaying erratic behaviour
		Drive without skill, untrained 'helper' driving vehicles
		Poorly maintained vehicles
		Over loading, drunk, unsafe driving, drive without lights, use of high beam lights, fake licenses, non-observance of traffic laws, talking while driving.
	Law enforcement	Absence of traffic police
		Dishonesty of traffic police/collection of toll from drivers

According to the roadside small business group:

> *"Junctions are dangerous places as these places are found to be always crowded. Rickshaw and passenger vehicles are parked here. They move in their own will. Drivers, passengers and even pedestrians don't follow traffic rules".*

Problems in road design: Almost all participants viewed problems in road design like narrow roads for crossing and driving of heavy vehicles through Dhaka-Singair-Manikganj road as fundamental causes of local accident casualties. The pedestrian group said, *'Local pedestrian becomes more vulnerable when two buses or trucks cross each other giving little options for the pedestrians on both sides of local roads'.* This statement indicates that the local road is very narrow and local pedestrians have no

Intersection: accident black spot (a bridge with steep gradient accessing the main road)

walking space or space to stand on the roadside, when two large vehicles like two buses or trucks pass each other. Furthermore, an absence of speed breakers (humps) at junctions and road bends, steep gradient bridges and roadside canals etc. have been identified as road safety problems by participants.

Driver's behaviour: "Reckless, over-speeding, competing with others, overloading, driving with fake licenses and violating safety rules on roads are the main causes for accident casualties in Dhaka-Singair-Manikganj". The following are some typical behavioural problems of local drivers as identified by discussants:

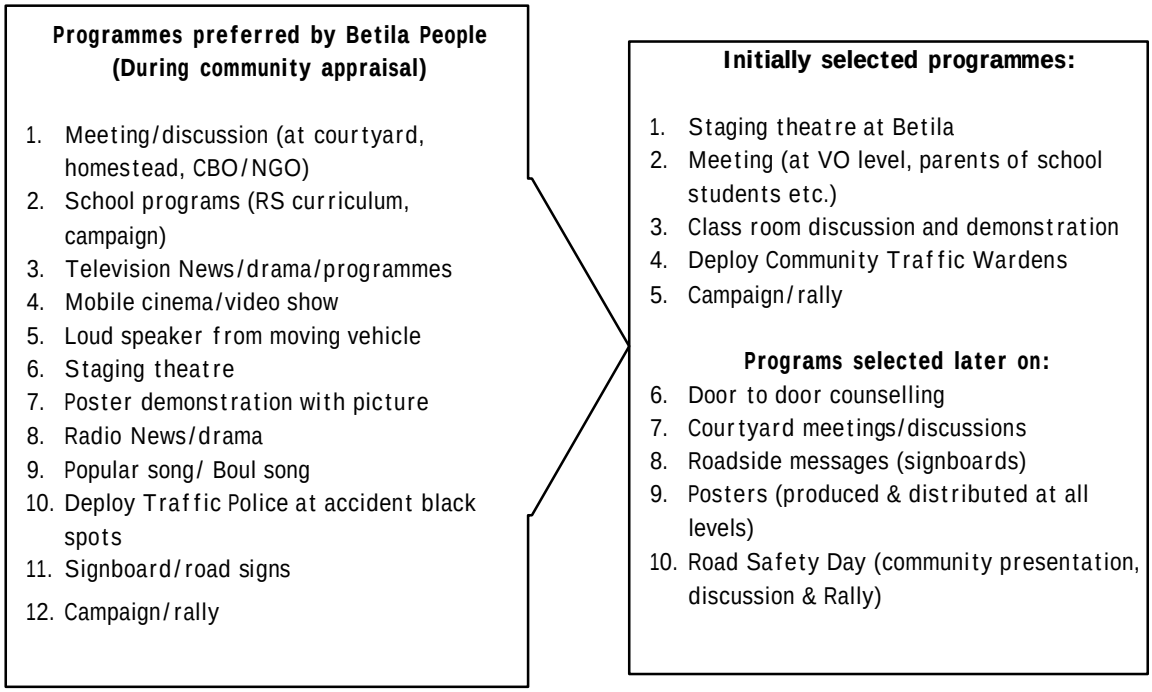
- Using high beam lights, parking on road, not knowing traffic rules, driving without proper training
- Tendency of motorised vehicles not to give way to motorised vehicles
- Speeding, drink driving, driving without lights
- Driving a poorly maintained vehicle
- Overtaking and overloading without knowing rules
- Having faulty brake systems.

Possible solutions to road user behaviour:

- Alert drivers to drive safely and ensure regular maintenance of vehicle
- Avoid overloading, drink driving, follow traffic rules, ensure proper training
- Alert drivers to follow traffic rules within speed limit, drive carefully, avoid overloading
- Drive well maintained vehicle
- Alert vehicle owners of dangers of over working their drivers
- Alert drivers about traffic signals, safe parking and danger of drink driving.

Community Road Safety Education Interventions

A set of multiple programmes including meeting or discussion at courtyard or homestead, classroom demonstration, staging of road safety theatre and deploying Community Traffic Wardens were selected initially as road safety education interventions. To make the programme more effective and to meet the demands of local people, interventions like door-to-door counselling with posters, and roadside pedestrian reminder messages (signboards) were also included.



The project then prioritised some pedestrian and passenger focused RSE messages for campaigning. All these messages came from the people of Betila:

Prioritised messages for road safety campaigns:

- Walk on footpath or on right side of road facing oncoming traffic
- Find a safe place to cross with a good view of moving traffic
- Stop, look both ways, listen and make sure it is safe to cross
- When walking with a child, hold their hand
- Don't cross in front of or behind a parked vehicle
- Don't run on or near a road
- Don't gossip or gather on the road or roadsides
- Don't use road or roadside for drying or storing crops/goods/straw/wood etc.
- Always tie your animals away from the road or roadside
- Never obstruct road or roadside with building materials/wood/fuel etc.
- When walking at night, wear or carry something that makes you easily visible by drivers
- Help the children and elderly to cross roads safely
- Use safe roads to go school and other social service facilities
- Don't get on or off a moving vehicle/bus
- Don't ride on the roof of a bus or truck

A flip chart focusing mainly on road safety messages for pedestrians, with pictures and facilitators instructions, were prepared in Bengali as educational materials. In addition, posters with safe walking and crossing rules have been developed with inputs from professionals, stakeholders and community members following consultation and feedback.

Community Theatre: staged by non-professional performers at courtyards or open places have been used successfully by BRAC since 1998 to promote social awareness at the grass roots level. During theatre shows the audience are encouraged to think about

the road use issues depicted in the show and then generate discussions around these issues.

Courtyard meeting: During community appraisal it was found that the residents strongly preferred meeting or discussion on road safety issues at courtyards (an area shared by more than one household in rural settlements). In fact, over the decades, people have become widely familiar with NGO courtyard meetings. The project followed no structured time and place for conducting courtyard meetings at Betila. However, consideration for the convenience of local people, and especially women, was given when arranging meetings.

Individual counselling/door to door contact: This campaign tool was considered suitable for people who felt uncomfortable to sit together in a group with members from other households and neighbourhoods due to local tensions, social and religious restrictions. It also proved very effective, especially for people who rear cattle on the road or roadside, and who use the road for drying and keeping cow dung and straw. It has been observed that if the improper road users are given motivation in the meeting or in the presence of another person of the community, they are often found embarrassed and start behaving responsibly. Door-to-door counselling on safe use of roads was conducted with pictorial demonstration and informal discussions.

School programme/counselling: Road safety education counselling with demonstration and practices were carried out in classrooms to disseminate messages on safe road use. Flip Charts were used during the campaign. At Betila, the school-based campaign was found to be very effective for providing rapid awareness of students.

Community Traffic Policing: For ensuring good practices of road users, three Community Traffic Wardens (CTWs) including two female and one male from the local area, selected from unemployed poor, have been deployed within the project area. The CTWs visible on Betila road in green aprons with BRAC logo were given a days training on road safety education and their duties and responsibilities.

Road Safety Day at Betila: For mass awareness and to create more enthusiasm among Betila and neighbouring people, a Road Safety Day was jointly observed by local community and BRAC.

Road safety procession: At the end of the meeting, a procession with a colourful banner, placards, festoons and slogans were brought out. The procession started from

Palora school ground and ended at Betila-Outpara intersection. Hundreds of roadside residents including women observed the procession with great enthusiasm.

Roadside messages with signboard: Signboards with road safety messages on safe walking and crossing rules were erected at four entry points of the Betila Ward. These were observed to be very effective and attractive for the people who use the road. The signboard contents remind them of the road safety messages they received earlier through different interventions.

The community preferred the pedestrian-focussed campaign. Multiple interventions like homestead or neighbourhood based meeting, school based road safety education campaign, television and radio-based programmes, disseminating road safety messages through multimedia, staging theatre locally and deploying traffic police were recommended from the local community.

An evaluation was conducted using an observational survey of pedestrian behaviour. This looked at which side of the road was being used, how 'older' people helped children, and how groups of people walked along the road. Improvements were found in all these behaviours.

References

BBS (2000). Statistical yearbook of Bangladesh (21st ed.). Dhaka: Bangladesh Bureau of Statistics

Khan, M. A. R. (2004). Prevention of road traffic accident in Bangladesh: current practices. Paper presented in the 2nd Asian Regional Conference on Safe Communities 1st Bangladesh Conference on Injury Prevention. 15-17 February 2004, Institute of Child and Mother Health, Matuail, Dhaka, Bangladesh

NRSSAP (2002-2004). National road safety strategic action plan. Bangladesh: National Road Safety Council, Ministry of Communications

NRTAR (2002). National road traffic accident report. Bangladesh: Bangladesh Road Transport Authority, Ministry of Communications

Rahman, A. K. Fazlur, M. (2003). Community road safety programme: a set in agenda in safe community approach: implications for Bangladesh. Proceedings of the National Workshop on Road Safety Management in Bangladesh, April 16-17, 2003. Dhaka: Accident Research Centre, Bangladesh University of Science & Technology

Appendix A3: Case Study – Leroro Community, South Africa

The case study in South Africa was conducted in conjunction with the Centre for Scientific and Industrial Research (CSIR). Every year in South Africa about 10,000 people are killed and 150,000 injured in approximately 500,000 accidents. The cost of road traffic accidents is estimated at more than 13 billion rand (1.66 billion US dollars) a year.

Of those killed, pedestrians constituted 4,086 of these crashes during 2003. There were more pedestrian crashes in rural areas of South Africa, namely 2,660, compared to the urban areas – 1,426 pedestrian crashes.

The focus of the South African pilot study was done in a rural community with a secondary focus on learners from the ages of 14 – 24. In terms of fatalities in rural areas, the age group 15-19 years constitutes 70% of road fatalities, compared to their urban counterparts, and the age group 20 – 24 constitute 73% of fatalities compared to their urban counterparts who make up 27% of fatalities. This is a cause for concern considering that urban areas are more densely populated. In the rural areas of South Africa, crashes tend to be more severe in nature, than in urban areas.

This pilot project was facilitated by means of the CSIR's Community-driven road safety model which has the following definition: "Empowerment of people by enhancing their personal capacity and self-worth so that they can become aware of their potential to meet their needs through participation and ownership of the process of development"

Case Study Site Selection

The community of Leroro was identified as the pilot community for the implementation of the TRL/DFID/CSIR community road safety education project in South Africa. The selection was based on the fact that not much, if any, road safety education had been done in this community, and because of the indication of an existing road safety problem in the community. Also, stakeholders had already identified that they would like to address the road safety problem in the community, thus the project started at an appropriate time.

Leroro is a community adjacent to the R532 highway, approximately 40km outside of Graskop, located in the province of Mpumulanga. It forms part of two other settlements, namely Moremela and Mathibidi, which are a few kilometres away from each other. Leroro, better known locally as Dienkie 2, forms part of Dienkie 1 (Moremela) and Dienkie 3 (Mathibidi).

Dienkie 1, 2, 3 fall under the local authority of Thaba Chweu. Participants referred to Leroro as Dienkie 2, although its official name is Leroro. The reason why is it called Dienkie is that people used to have difficulty pronouncing the word 'Leroro' – thus, it's unofficial name being Dienkie.

Case Study Approach and Methodology

PHASE 1: Identification of the pilot community and stakeholders

Meetings were held with the Mpumulanga Local Government's Road Safety Directorate to discuss the location of the pilot community as well as the process that was to be followed, as they were the key role players of road safety in the province of Mpumulanga. The development and building of partnerships, as well as the clarification of the roles of the various stakeholders in the project, also played a key role during this phase.

PHASE 2: Problem Identification

Once the pilot community had been identified and relationships built with key stakeholders, the next step was that of building relationships with community representatives and leaders. Following this, various techniques were used, both qualitative and quantitative, in terms of identifying the road safety problems in the community of Leroro. Techniques used included:

- Semi-structured interviews with community leaders and key stakeholders
- Meetings held with community leaders and stakeholders
- Use of participatory rural appraisal techniques such as mapping of community road safety problems during community meetings
- Focus group discussions were run with different groups in the community.

Once the problems had been identified with the community, one road safety behavioural problem was selected for the development of the community education intervention.

PHASE 3: Development of community intervention – preparing for implementation

This phase entailed the development of an action plan for the implementation of various safety interventions together with the established community task team and various stakeholders. The key problem identified was that of pedestrian safety related to the use of alcohol and drugs. The target audience was that of secondary school learners and youth.

Part of this phase included conducting a survey amongst secondary school learners in order to understand their pedestrian behaviour in relation to the use of alcohol and drugs. This survey also assisted in understanding the context of the problem, its causes and the extent of the problem within the community.

PHASE 4: Implementation

Implementation of the community education and communication programme entailed running the following processes:

- Participatory, interactive training on the impact of alcohol and drugs on pedestrian behaviour by means of the flipchart developed in conjunction with learners and youth volunteers

- Facilitation of school-based competitions between the community secondary schools
- Organisation and facilitation of the community pedestrian safety day
- Distribution of the pedestrian safety pledge to learners and parents
- Distribution of the pedestrian safety bookmark to learners
- Distribution of pedestrian safety packs to learners

PHASE 5: Final Evaluation

The final phase of the project consisted of running the following processes:

- Final evaluation of the project together with all the relevant stakeholders, using a participatory evaluation technique
- Focus groups with secondary school learners
- Analysis of results
- Writing of project report

This process outlined above, was embedded on the CSIR's community-driven road safety model that embraces the following key community-driven development principles:

- Communities are always growing and developing
- Behaviour – however odd – is a sign of people's attempts to grow and develop;
- Communities have great potential for growth and development, and therefore one should respect people and communities and trust them to bring about positive change for themselves
- People have the capacity to identify their own needs and problems, to work out and plan their own strategies and to evaluate their results, with the help of a facilitator
- The facilitator needs to have respect for the community's way of finding its own solutions for its own problems, to have respect for their values and culture, and most importantly to have the belief that the community has the potential to address its own problems

Stakeholders were representatives from the local authority, councillors, Graskop Tourism Board, Emergency medical services (EMS), South African Police Services (SAPS), Dienkie Advice and Resource Centre, educators and clinic representatives.

The following problems are a summary of the discussions and those issues that were highlighted by stakeholders in Graskop and Leroro:

Engineering

- Three stop signs and two pedestrian crossings had been erected in Leroro to try to keep things orderly, however, pedestrians don't make use of the pedestrian crossings and motorists don't obey the stop signs. Education for both pedestrians and motorists is needed
- Pavements or shoulders on the road way are needed for pedestrians to walk on. Pedestrians walk in the main road. Most of the time, they do not have any choice to walk there because of the rain and mud making it impossible to walk next to and not in the road
- The main road in Leroro was not always tarred. Since it had been tarred, the volume of traffic has increased, both in terms of motorists and pedestrians

- No extra traffic signs have been erected to accommodate the new, high volume of traffic
- Since the road has been completed, the speed of vehicles has also increased
- Taxis park anywhere on the main road, as well as on the roads within the settlements
- Taxis use the main intersection to pick people up and drop them off
- Guardrails are needed next to the road
- Signs that indicate that one should be aware of pedestrians are required to show visitors and tourists that there are people walking in the road.
- Bus stops are required because the buses stop in the roadway to pick commuters up or drop them off
- The shoulder of the road is in very bad condition as well. This causes people to walk and cycle in the roadway
- Stop signs only work when there is law enforcement

Cattle

- Cattle on the main road, poses another threat to motorists
- Fatal accidents are a result of the cattle on the road
- Farmers have erected fences to keep the cattle from the road but the fences are being stolen
- The problem has received attention and cattle that are found on the road are now being impounded. Public works should fence the areas next to the road and camps should be built for the cattle
- The community should come up with a plan or strategy to keep people from steeling the fences
- Herdsmen must be educated on road safety. It could be a community project
- Farmers mustn't be allowed to put their livestock outside of a Kraal (fenced stockade/enclosure)

Visibility

- Thick mist, making visibility poor, is a problem on the road, especially within the area
- The road from Graskop to Dienkie (35 km) doesn't have any cat eyes or other measures to help motorists to see the road. The drivers have trouble seeing the lines on the road to help them to stay on the road
- The mist also makes it difficult for drivers, as well as pedestrians, to see each other
- Pedestrians tend to walk on the wrong side of the road
- Education is needed in this regard because people don't know about reflective clothing, materials or what clothes to wear when visibility is minimal

Tourists

- Pedestrian accidents are very rare. (This was contradictory to what community members said about this issue). Vehicle accidents occur mostly at night, because of drunk driving or because of tourists not familiar with the road
- Accidents also occur because tourists tend to watch the scenery and not the road
- Tourists tend to stop anywhere and everywhere causing accidents

Alcohol and drugs

- Alcohol and drugs are not a big problem in Dienkie. (This was contradictory to what community members said about this issue)
- Bottle stores are next to the main road and people cross the road drunk
- During the festive season, there are increased numbers of drunken pedestrians and drivers, causing accidents

Pedestrian behaviour

- Before the main road was tarred, people use to walk in the road all the time
- It was more of a pedestrian road
- Since the road has been tarred, people still use it, as before – it is a habit, which is going to be difficult to change

Law enforcement

- Traffic legislation is not enforced
- Law Enforcement is not sufficient
- A satellite station has been considered for law enforcement in the Dienkie area
- The alleged bribing of traffic officers is another problem

Taxis and buses

- Taxis do not stop at the stop signs in the main road. The intersections are used as taxi pick-up points
- There are also no loading zones for buses

Community processes

- The people of Dienkie are under tribal authority and listen to the Kgosi (tribal king)
- The Kgosi works with the councillors of the area
- One has to work through the councillors to get to the Kgosi. The Kgosi will listen to the details concerning the project
- He will then either give permission or decline involvement in the project
- The bottom line: Commitment from the different parties is needed in order to achieve success

Education and recommendations

- People in Dienkie have never been told about road safety
- A road safety programme is needed to inform and teach people about road safety
- Training is needed in the communities for adults and children
- There are 13 secondary schools and 7 primary schools in the Dienkie area
- Schools are crucial in the process of educating learners about road safety
- Pamphlets should be distributed at schools for learners to read
- A teacher out of each school should be trained in road safety. They should then assist in training other teachers as well
- In 2002, the schools will start with the Child in Traffic, as well as the Safety in Traffic Education Programme (STEP) from the Road Safety Directorate
- Road safety programmes between schools should also exist. Schools can do research on how to be safe on the roads. In this manner, schools can assist each other
- Volunteers can be used to assist with school patrols

- Secondary schools must take some initiative with road safety problems as well
- Road safety education starts at home
- Speakers should talk to the learners. This should work very well because the speaker has a captive audience and the learners are hungry for new information
- Road safety competitions for primary/secondary schools should be considered. This could consist of a play, music or sports (soccer) competition
- Posters should be put up at schools, clinics, at the tribal authority and the DARC (Dienkie Advise and Resource Centre). The language on the posters should be English
- A road show could have a positive impact on the education of people. The language should be Pedi or Northern Sotho
- To be effective, the road safety programmes should be continuous and there should be a follow up to the programmes
- Workshops with teachers and principals could also work

Generative themes (common issues/problems to all discussions) that arose during the needs assessment were the following:

- Drunken drivers
- Drunken pedestrians
- Disrespect between motorists and pedestrians
- Problematic pedestrian behaviour

The issue of drunken pedestrians and motorists appeared to be predominant because of unemployment, frustration with not being able to get work and because of social problems. The project team then took the above results into consideration and decided to focus on the issue of alcohol and drugs in the community – as it seemed to be one of the core issues resulting and displaying itself in the problematic road user behaviour in Leroro.

The summarised results of the learners survey was shared with a group of stakeholders from Leroro. The initial reaction of the stakeholders to the findings of the learners' survey was shock – they were aware of the problem amongst learners and the youth, but were not aware of the full extent of the problem.

The stakeholders provided the following comments:

- Learners go from small towns like Leroro to bigger towns like Nelspruit to access drugs
- As most parents are away (working at bigger towns) there is no parental control, and as a result learners project their frustrations by means of using drugs
- In terms of liquor, they said that both girls and boys drink alcohol, however, a male feels more recognised if he makes use of a drug, and not just alcohol
- Glue sniffing is a problem (this could relate to the 'other' substances indicated by learners in the survey)
- Some learners feel ashamed to take 'dagga', which may have altered their responses on the survey – Mandrax is more 'cool' and more 'popular'
- Law enforcement does not work in rural areas, as some people – 'depend on *that* income' – thus, enforcement is not consistent
- An awareness programme should be held so that parents become aware of the problem

- Every morning the community is littered with liquor bottles that lie around in the streets
- Police officials are 'drinking' as well; with a result they do not do any enforcement activities at shebeens (informal bars where liquor can be purchased). When you call for a police official they will tell you that there are no vehicles available, but then you will find the police vehicles parked at shebeens. They requested that outside police officials from Lydenburg should be brought in to discipline existing police officials. Police should be part of the stakeholder meetings. Their lack of involvement should be followed up
- Road accidents are not reported, as there is a mutual understanding that is normally reached between drivers, or at times documents go 'missing'
- A drug policy should be introduced at schools

Community Road Safety Education Interventions

The project team then analysed and considered the suggestions for the community interventions by the various stakeholders, educators, learners and youth, and designed the community education package, outlined below.

The theme of the package was, "Tomorrow's accidents haven't happened yet – YOU can make the difference!" This theme was selected on the basis that learners felt that they had no future, no hope while living in the rural community of Leroro. The theme was used as a motivator for learners - that no matter who they were – they could make a major difference by influencing peers and by adopting safe road-user behaviours, and thereby helping to make their community a safer place to live, work and play in. The package consisted of:

- Flipchart – "Tomorrows accidents haven't happened yet – YOU can make a difference! The focus of the flipchart was on educating learners about the dangers and effects of alcohol and drugs; and the impact it has on pedestrian safety, road safety and the impact it has on community life. The flipchart was developed in such a way that encouraged participation and discussion between the trainer and learners. Use was made of perceptual mapping – a technique where a word is placed in the centre of a page, and participants are encouraged to give the first words that come to their mind when they see the word. This provides the facilitator with an understanding of the level of knowledge and the attitude of the learner towards the word. Thereafter, a discussion takes place. Perceptual mapping was used as an introduction to the topics of 'pedestrian', 'pedestrian safety', 'alcohol', 'drugs' and 'alternatives to drinking and taking drugs'. Key topics discussed in the flipchart were: the extent of the road safety problem in South Africa and Leroro, the problem of pedestrian safety, alcohol as a road safety problem; drugs as a road safety problem, how to say 'no' to peer pressure, the impact of alcohol and drugs on the community, alternatives to drinking and taking drugs, how to be a safe pedestrian, and how to make a difference in Leroro so that 'tomorrow's accidents don't happen'.
- Bookmark - "Tomorrow's accidents haven't happened yet, YOU can make a difference!"
- Parent and learner road safety pledge, read and signed by both parties
- Pedestrian safety training provided by the regional road safety officer – training done by means of the Department of Transport's Adult Pedestrian Flipchart

- Drama competition for learners
- Essay/poetry competition for learners
- Poster competition for learners
- Road safety posters put up throughout the community
- Community pedestrian safety awareness day

Once the package was developed, a prototype was taken back to the community and tested with learners, educators, youth and stakeholders. Their perceptions, input and comments were recorded, and the package was refined and finalised.

Evaluation of the community education interventions took place by means of focus group discussions with learners, surveys with learners and educators, and a participatory evaluation game of 'snakes and ladders' with stakeholders. Thus, a combination of quantitative (questionnaire surveys) and qualitative (focus group discussions) data was used.

Half of the learners (51%) indicated that it had changed their behaviour, with a further 8% indicating that most of the time their behaviour had changed, while 4% said that it had changed only a little, and 4% saying it had not changed at all. A further 33% did not respond to this question.

The majority of learners (137) responded that the training was important and necessary for learners in Leroro, with only 4 learners indicating that it was not necessary.

In conclusion, it appears that community road safety education programmes can make a difference in the lives of communities. However, a limitation of the study is that there is a great deal of self-reported behaviour which is normally reportedly better than what actually transpires in reality. However, according to stakeholders and the community development advice office in Leroro, from their observations (which could again be regarded as subjective) the project has made a difference to the road-user behaviour in the community. It can also be noted that campaigns alone cannot change well established behaviours, but they can raise awareness, which in this case did take place.

Also, the lack of recorded accident data makes it difficult to verify the evaluation in terms of the project making a difference through the reduction of accidents in the community. A recommendation would then be that a mechanism be established that will allow for official data to be collected in the community.

What is encouraging is that the learners from one of the secondary schools have been mobilised as a direct result from the project to establish their own traffic safety club. It is recommended that the local authority together with the road safety directorate of Mpumulanga, offer their continued support to this group of enthusiastic learners, to ensure sustainability of their initiative.

Appendix A4: Case Study – Ashaiman Community, Ghana

This case study was conducted in conjunction with GRSP-Ghana. Ghana shares a common phenomenon with other developing countries in that pedestrian fatality in Ghana accounts for about 45% of the national fatality rate. It has been estimated that the average pedestrian fatality rate throughout Africa is 40%. Additionally, children between the ages of 0-16 account for 46% of the national pedestrian fatality rate, which made this study a timely and pertinent one.

In 1996 it was reported that 8,483 accidents occurred with 9,895 injuries and 1,049 fatalities in Ghana. In 1998 it was reported that about 1,600 people were killed and 11,000 injured in 10,000 reported accidents. Current estimates place Ghana's fatality at 73 deaths per 10,000 registered vehicles.

In addition to pedestrians, users of 'trotro'[1], account for the majority of the injuries. Together users of mini buses (which are used for the 'trotros') and pedestrians constitute the most frequent accident victim groups, constituting about 62% of all injuries and fatalities. The other road users' groups are drivers, occupants of cars, trucks and motor and pedal cyclists.

Ashaiman in the Tema Municipality Assembly (TMA) was selected as the area of study for this research. It is a heterogeneous community organised along ethnic, religious and occupational identities and dominated by four ethnic groups comprising Ga-Dangbe, Ewes, Dagomba and Akan speaking people. There is also a large population of minority migrants from other West African countries, such as Nigeria, Togo, Burkina Faso and Mali resident in the locality (IBIS, 2003).

Despite its size and population (150,312 in 2000), Ashaiman is largely underdeveloped compared to its surrounding settlements, such as Tema and Accra. It is a deprived and marginalised settlement, although it is reported to be a major source of revenue to the TMA. Ashaiman has serous social and economic problems and infrastructure and social amenities are lacking.

Case Study Site Selection

The following criteria were prepared to identify a feasible community for the study:

- The community bears some characteristics, which fall within DFID's general focus, namely poverty, gender and children of both school going and non-school going age
- Unplanned community with sprawling population competing for road usage
- The characteristics of the road infrastructure lend the community to be a candidate for road safety investigation and the development of interventions. There are no pedestrian facilities. The roads do not have any walkway for pedestrians. Hawkers, cart pushers and other pedestrians are virtually competing for space on the road. In terms of other facilities, the drainage system is poor, and the drains are uncovered. There is only one designated transport terminal, and road signs and markings are negligible.

[1] "Trotro", like "Matatu" in East Africa is the local name given to the privately owned mass public transport. "Tro" literally means three pence in the Ga language in Ghana. Such public mass transport attracted the rate of three pence soon after independence in Ghana in 1957.

- Over a period of more than ten years, Government introduced decentralisation as a cornerstone of administration for the country. With the establishment of Metropolitan, Municipal and District Assemblies, community-oriented groups emerged, providing channels through which any educational, health and environmental or electoral issues could be easily channelled for effective dissemination of information.

Based on the above background, the study was designed to solicit from residents the problems of road safety in the community and how this affects their livelihoods, with the ultimate objective of using their responses to design road safety educational tools for them.

Case Study Approach and Methodology

Two key participatory tools were used in gathering data at Ashaiman. These were focus group discussions (FGD) and key informant interviews. The groups interviewed represent a cross section of the community and therefore a true representation of residents of the community.

The groups that were interviewed using the FGDs include the following:

- School children/pupils (two groups)
- Market traders
- Passengers at lorry stations (three groups)
- Assemblypersons
- Staff responsible for main lorry station at Ashaiman
- Ghana Private Road Transport Union (GPRTU) executives
- Motor and Transport Unit (MTU) Police, Ashaiman

The key informant interviews covered the following:

- The Secretary of the Zonal Council
- IBIS (an international NGO based at Ashaiman)
- The Tema Municipal Engineer
- Nimba Community Support Services (NIMCOSS) (a local NGO)
- Teachers
- Shop owners

Case Study Findings

A number of issues were mentioned in each of the FGDs as problems of road safety at Ashaiman. It was observed that while some of these problems are common to all those interviewed, others were peculiar to specific social groups/beneficiaries. For example, the problems the traders face in the market varies from that of those selling outside the market gate and that of school children.

School children are concerned about their peers who are sent to purchase items from or sell on the streets by their parents because in the process they get knocked down by vehicles. They are also concerned about school children that get knocked down in the process of crossing the road on their way to school. The latter is peculiar to schools that are located along major roads at Ashaiman. The children also mentioned careless driving by motorists and an absence of zebra crossings on the roads as some of the problems of road safety at Ashaiman.

The problem of road safety for petty traders and street vendors along the roads of the main central business district (CBD) of Ashaiman are unique to their location. They are concerned about vehicles, bicycles and trolleys knocking down elderly people. The street vendors have taken over the little space along the streets that is reserved for pedestrians. The street vendors and traders, however, acknowledged that there are rarely fatal accidents along such busy roads since the congestion on the roads makes it impossible for motorists to speed.

The GPRTU, which is an umbrella association of drivers in the country mention, among others, the use of trucks, bicycles and trolleys on the busy roads as the main causes of road accidents at Ashaiman. They are concerned about the narrow roads, which some motorists take advantage of and drive on their shoulders. Further, they are concerned about the absence of parking spaces for vehicles because motorists park indiscriminately in any available space. Others stop on the road for passengers to alight, causing a threat to pedestrians, petty traders and street vendors.

The traders who are located in the markets as legal occupants of their space seem to be one group of residents who are affected directly and indirectly by problems of road safety. Indirectly, their customers get knocked down on their way to the market, leading to poor patronage of their goods. Directly, they also get knocked down by bicycles, which are everywhere in the market place. The traders are of the opinion that the commercial drivers are careless and many of them do not have driving licenses, neither do they abide by road regulations. From the point of view of the market traders therefore, the commercial drivers at Ashaiman are one group of people responsible for road accidents in the community. They also think that the police encourage the drivers to disregard road safety regulations by taking bribes when they are found guilty of traffic offences.

The 'trotro' drivers, according to some of the traders and the police, are very notorious among the commercial drivers at Ashaiman. They do not respect traffic regulations. Many of them do not have driving licenses while some have poor eyesight. They park at any place along the main roads in the absence of parking spaces. These issues were mentioned in a number of the FGDs as problems of road safety in the community.

The key issues that seem to be running through all the FGDs, which the majority of the participants in each FGD mentioned as being the problems of road safety at Ashaiman are as follows:

- Absence of walkways along the streets of Ashaiman
- Careless driving in the township
- Inadequate knowledge about road signs and driving regulations
- Parking at wrong places along streets
- Narrow roads
- Too many vehicles in the township
- Driving on the shoulders of the road
- One main road in the settlement
- Hazardous over-taking
- Absence of zebra crossings.

Table A5 presents the frequency of road safety problems mentioned in each of the FGDs. The participants of the ten FGDs came up with 14 key problems of road safety.

The table illustrates the importance of the issues to the residents because any intervention would have to take into account the extent to which a specific problem affects the residents, and hence the issues that are of much concern to them. Prioritising the problems of road safety based on the most frequent issue also indicates those that need to be attended to urgently in any road safety education aimed at reducing road accidents.

Table A5: Number of times road safety problems were mentioned in the focus group discussions

Problems of Road Safety	Frequency
Selling by the roadside and on pavements.	7
Crossing busy roads	2
Selling on the street.	3
Disrespect for road signs.	2
Motor cycle/bicycle/truck accidents	6
No parking space near the market.	3
Absence of zebra crossing.	4
Absence of walkways on the streets/roads.	2
Careless driving	3
Drivers do not undergo driving test	1
Ignorant of road signs and regulations	4
Parking at wrong places	2
Poor eyesight of drivers	1
Children made to sell on the street	3
Total	43

Source: Fieldwork, Ashaiman, 2003.

In response to the question 'who is affected by problems of road safety at Ashaiman?' therefore, the participants at each of the FGDs mentioned the following groups of people:

- Children (particularly children selling along the streets),
- Customers
- Elderly men and women
- Market traders
- Hawkers along major streets (particularly those selling iced water)
- Pedestrians and passengers using the market and the lorry station streets
- Shop keepers along the market street
- Pupils

It was admitted that vehicles knock down pedestrians almost once every week and these pedestrians sustain minor injuries most of the time.

Community Road Safety Education Interventions

In all the focus group discussions, attempts were made to know the kind of recommendations the residents could make in order to minimise road safety problems in the community. The majority of participants mentioned training and education as a strategy that could be adopted to minimise road accidents. Table A6 below shows the category of residents that the various focus groups recommended for specific training in road safety.

Table A6: Training needs for reducing road safety problems

Focus Group	Proposed Trainees	Subject Areas for Training
School children	▪ School children ▪ Parents	▪ Risks associated with sending children across busy roads/streets. ▪ Risks associated with children selling along major roads in the community.
Market Traders	▪ Zonal Council Members ▪ Parliamentarians ▪ Assembly persons	▪ Education for the staff of the local government to enhance their performance as legislators in relation to road safety. ▪ Education for the traders on road safety.
Passengers/pedestrians	▪ Drivers ▪ Street vendors	▪ Education on safe driving and the inconveniences they cause to street vendors through careless driving.
GPRTU	▪ Drivers, street vendors	▪ Education on dangers of selling on the street.
Assembly persons	▪ Street vendors ▪ Traders	▪ Education on the danger associated with selling on the streets. ▪ The need for support from the Tema Municipal Authority and the National Road Safety Commission to carry out road safety campaigns.
Police MTU	▪ Street vendors ▪ Cyclists	▪ Education on dangers of selling on the street.

Source: Fieldwork at Ashaiman, 2003

In addition to identifying the stakeholders, the study also identified possible dissemination channels as shown in Table A7 below, based on available opportunities and the background of the Ashaiman people.

Table A7: Dissemination channels and materials

Possible Channels for Dissemination	Materials
Faith-based organisations	Talks
The local Media (Adom FM Station at Tema)	Talks, drama, discussions on road safety
Schools	Posters, talks, competition, drama.
Ghana Private Road Transport Union meetings	Talks
NGOs	Talks
Zonal Council Meetings	Talks
Meetings of Youth Organisations	Talks

Source: Fieldwork, Ashaiman, 2003.

Following the participatory study using focus group discussions and other participatory tools, a number of proposals were made by participants (the beneficiaries of the project) as to how road accidents could be reduced at Ashaiman. The findings of the study were presented to the local government representatives of Ashaiman as well as some other stakeholders for validation and clarification. Results of these discussions and appraisal of the proposed interventions were:

Zebra Crossing: Absence of zebra crossing at some busy road intersections at Ashaiman was mentioned as one of the problems of road safety in the township. Participants at the meeting proposed that the project should provide them with some zebra crossings. Since this request would involve other stakeholders, such as the Urban Roads Department of the Tema Municipal Assembly (TMA) and a lot of bureaucracy, it was proposed that it should be added to an on-going project that an oil company, TOTAL Ghana, was going to sponsor in a number of communities in the country. The issue of sustainability also came up because a one-off painting of zebra crossings would make little impact if not sustained. The above suggests regular maintenance of the zebra crossings for a certain period of time in terms of repainting them regularly, which the project would probably not be able to support given the limited timeframe of this particular project.

Contributions from Civil Society Organisations/Groups: Coming from a background of poor governance, civil society organizations at Ashaiman have for a long time now have taken into their hands the governance of the township even before the local government district assembly was conceived in Ghana in 1988. They include women's groups, over 70 youth organizations and a number of NGOs. The participants at the meeting felt that working with some of these groups that have access to various categories of vulnerable groups and individuals in the township would be an appropriate means of or channel for disseminating some of the road safety messages as well as getting them to be responsible for some of the actions on road safety. A decision was made to work with some of the following civil society organizations:

- Ashaiman Zonal Coordinating Council Meeting
- Ashaiman Youth Organizations Coalition (AYOC)
- Ashaiman Task Force
- IBIS (a Danish NGO)
- Durbars (public meetings)

Posters: The GRSP Ghana has a number of posters on road safety. At the meeting with the assembly persons, they agreed that the use of posters is a very effective tool of passing on road safety messages. The poster has ten simple messages in English on road safety and was considered as appropriate for many places. It was suggested that in addition to sending the posters to schools, the posters should also be displayed at the following places:

- Religious organisations (churches and mosques)
- Clinics
- Markets places
- Public toilets
- Ashaiman Zonal Council

Film shows: The educational level of most people at Ashaiman is such that visual presentation of messages is thought of as the best way to disseminate road safety messages. Thus it was decided that in place of the radio talk shows, there should be film shows for each of the eight communities in Ashaiman.

Efforts are already underway to organise this in the evenings for the residents. The Ministry of Information has been contacted and they are prepared to give films on road safety to GRSP-Ghana to be shown in target communities. They are currently arranging

for the mobile van and screen. This is expected to be followed with periodic mobile education on road safety, also with the support of the Ministry of Information.

This study aimed at understanding the issues of road safety from the perspective of those who are affected by the problems as part of an attempt to develop a sustained solution to the problems of road safety at Ashaiman.

It was noted that the design and development of Ashaiman has been a contributing factor to the problems of road safety in the community. The community has very narrow roads and streets without walkways and parking spaces. With increasing population and vehicles, leading to more traffic, road accidents at Ashaiman have become a weekly affair. Various stakeholders experience the problems of road safety differentially but the most concerned groups are school children, the Zonal Council and market traders. This is because these groups work in the heart of the Ashaiman community and are exposed to the dangers of road accidents on a daily basis.

There is a willingness and desire on the part of some stakeholders in the community to help curb the incidence of road accidents through a sustained educational package, but some of these people lack the basic resources to do so. Further, there is very little in the local and national policies that compel local authorities to include road safety education in their budget. This is because over the years, road accidents have not been directly linked to poverty and hence community road safety education programmes have not been given the necessary attention required, despite road accidents in the country being one of the highest in the sub-region. There is, therefore, a need to sensitise both the local government and policy makers about the need to plan for road safety activities in the local development strategy so that road safety campaigns can cease to be a one-off annual event.

References

IBIS (2003). Baseline report on local government, civil society and private sector organisations and activities in Ashaiman. Ghana: Institute for Democratic Governance and IBIS

Appendix B1: Example of topic guide for focus group discussions (Bangladesh)

Group Discussion Checklist for GoB/NGO

1. Road safety problems faced by people (general discussion/keep prompting 'anything else')

2. Road safety problems faced by the people of Betila (keep prompting 'anything else')

3. Views/solutions on reducing road safety problems (especially at Betila)

4. Who are main target groups/most important people to be intervened (keep prompting who? Why?)

5. Role of Government of Bangladesh/NGO's role for road safety (keep prompting what more?)

6. Assistance Government of Bangladesh/NGO can extend for sustainable local road safety programmes (keep prompting what more?)

7. Most effective programmes for improving road safety awareness at Betila (keep prompting 'anything else')

8. Most effective approaches should be used for interventions (keep prompting how?)

School based	Why (pl. Specify)
	How?
Household based	Why (pl. Specify)
	How?
Courtyard based	Why (pl. Specify)
	How?
Community based	Why (pl. Specify)
	How?
Media (e.g. newspaper, radio, TV)	Why (pl. Specify)
	How?
Other (pl. Specify)	Why (pl. Specify)
	How?

9. Choice of resources/tools for reducing road safety problems of betila (keep prompting 'anything else')

Source: Author's fieldwork, Ashaiman (2003)

Appendix B2: Example of road safety problem matrix identified by FGD in Ashaiman, Ghana

Groups / Issues	Market women	Assembly men	Main lorry station staff	Passengers at Nungua lorry station	Pupils	Passengers[2] at traffic light station	Staff of GPR-TU	Police MTU	Passengers at Ashaiman station	Total
Selling by the roadside and on pavements	*	*	*	*	*	-	*	-	*	7
Crossing busy roads	-	-	-	-	*	-	*	-	-	2
Selling on the street	*	-	-	-	*	-	*	-	-	3
Disrespect for road signs	*	-	-	*	-	-	-	-	-	2
Motor/bicycle/ truck accidents	*	*	-	-	*	-	*	*	*	6
No parking space near the market	*	-	-	-	-	-	*	-	*	3
Absence of zebra crossing	*	-	*	-	*	-	-	-	*	4
Absence of walkways on the streets/roads	*	-	-	-	-	-	*	-	-	2
Careless driving	*	-	-	-	*	-	*	-	-	3
Drivers do not undergo driving test	*	-	-	-	-	-	-	-	-	1
Ignorant of road signs and regulations	*	-	*	-	-	*	-	-	*	4
Parking at wrong places	*	-	-	-	-	-	*	-	-	2
Poor eyesight of drivers	*	-	-	-	-	-	-	-	-	1
Children are made to sell on the street	-	-	*	-	*	-	-	*	-	3
Total	12	2	4	2	7	1	8	2	5	43

Source: Author's fieldwork, Ashaiman (2003)

[2] The passengers are residents of Ashaiman.

Appendix B3: Example of logical framework for monitoring and evaluating road safety education and publicity (World Bank, 2002)

Narrative	Objectively verifiable indicators	Means of verification	Assumptions
Goal: To achieve safe road use in [country]			
Purpose: 1. To establish an effective national programme of road user education and publicity	1.1 Random checks show road safety education being taught at schools and 2 national campaigns a year 1.2 50% increase in knowledge and demonstrated improvement in behaviour at selected schools along major highways by 2002	1.1 NGO surveys 1.2 NRSC report 1.3 Campaign reports 1.4 Before and after testing and behavioural observations at selected schools	1 a) Funding mechanism established b) Co-ordination with all relevant organisations c) Full time education/publicity officers in Secretariat d) Technical working group established
Outputs: 1. Permanent trained full time staff in NRSC Secretariat	1.1 2 members of full time staff in post by 1999 1.2 2 members of staff attend BITER Phase II Training Course by 2000	1.1 Salaries paid 1.2 Certificate of attendance	1 a) Funding available b) Appointments approved c) NRSC co-ordinator in place
2. Road safety included in formal and non-formal curricula	2.1 New road safety syllabus integrated into curricula and in use nationally by 2002	2.1 Progress reported by Curriculum Board/Non formal education department 2.2 School curricula published	2 a) Curriculum Board/Non formal education support and approval b) Revision cycle occurs within project life time c) Syllabus referred to is standard set by project final report
3. Teachers trained in Road Safety Education	3.1 New road safety syllabus agreed for Teacher Training Qualification and Open University by 2002 3.2 Agreed syllabus in use nationally by 2002 3.3 At least 100 hundred teachers' seminars on teaching road safety conducted in government and NGO primary schools along major	3.1 Road safety included in curriculum 3.2 Use of syllabus in PTIs, Universities and BOU reported 3.3 Record of seminars conducted in schools 3.4 Feedback from teachers	3 a) Road safety in national schools curriculum b) Ministerial support and approval c) Revision cycle occurs within project lifetime d) Schools are willing/able to hold seminars e) Teachers able to attend f) Staff in NRSC Secretariat trained

	highways by 2001		
4. Supplementary materials/teachers guide in use	4.1 Approved teaching materials produced and in use in government and NGO primary schools along major highways by 2001 4.2 Expanded to be in use nationally by 2002	4.1 NRSC report 4.2 Record of distribution 4.3 Feedback from teachers	4 a) Curriculum Board approval b) Field testing conducted on schedule c) Funding d) Existing dissemination systems can be used
5. Road safety articles included in media to raise general awareness	5.1 At least one article on road safety on national TV, radio or in press every month by 2000	5.1 Press cuttings, tapes of radio/TV articles 5.2 NRSC report	5 Media interest
6. National targeted campaigns developed and implemented	6.1 At least 2 national data led campaigns per year targeting road users at risk or specific behaviours by 2001	6.1 Campaign materials 6.2 Campaign reports 6.3 NRSC report	6 a) Funding/sponsorship b) Adequate accident data or other data sources available
7. Local targeted campaigns developed and implemented	7.1 At least 2 local data led campaigns per year, to support local initiatives or to address specific localised accident problem by 2002	7.1 NRSC report 7.2 Record of distribution of materials 7.3 Campaign materials	7 a) Funding/sponsorship b) Co-ordination with police and engineers c) Accident data available

APPENDIX C: USEFUL ORGANISATIONS (WITH WEBSITES)

International Organisations and Institutions

EC	European Commission DG-VII (Transport) http://europa.eu.int/comm/dgs/energy_transport/index.html
OECD	Organisation for Economic Co-operation and Development www.oecd.org/home/
ECMT	European Conference of Ministers of Transport http://www1.oecd.org/cem/
WHO	World Health Organisation http://www.who.int/en/
ETSC	European Transport Safety Council http://www.etsc.be/oldsite/

Non Governmental Organisations

ERF	European Union Road Federation (ERF) http://www.erf.be/
PRI	International Road Safety (La Prévention Routière Internationale) http://www.lapri.org/fundo11.htm
PIARC	Permanent International Association of Roads Congresses http://www.piarc.org/en/
FEVR	Fédération Européenne des Victimes de la Route http://www.fevr.org/
AFVR	Association des Familles des Victimes de la Route http://home.worldcom.ch/~fevr/afvr.html
AIT/FIA	International Touring Alliance/International Automobile Federation http://www.aitgva.ch/AIT_Home.htm
FIA	Fédération Internationale de l'Automobile http://www.fia.com/index_1024.html
IRF	International Road Federation http://www.irfnet.org/cms/pages/en/viewpage.asp
IRTE	Institute of Road Traffic Education http://www.irte.com/index.htm
IRU	International Road Transport Union http://www.iru.org/
ECF	European Cyclists Federation http://www.ecf.com/
SPM	Swiss Pedestrian Mobility http://www.fussverkehr.ch/en/
CSR	Conseil suisse de la sécurité routière http://www.verkehrssicherheitsrat.ch/

CIECA	Commission Internationale des Examens de Conduite Automobile http://www.cieca-drivinglicence.org/
ITCTraffic	Institute for TrafficCare http://www.itctraffic.com/
TISPOL	European Traffic Police Network http://www.tispol.org/content/Home
eScope	Observatory for eSafety activities http://www.escope.info/

State authorities responsible for Road Safety

Australia	Federal Office of Road Safety http://www.atsb.gov.au/
Australia	Road Safety Western Australia http://www.officeofroadsafety.wa.gov.au/
Canada	Transport Canada http://www.tc.gc.ca/
Czech Republic	Ministry of Interior http://www.mvcr.cz/
Finland	Ministry of Transport http://www.mintc.fi/
France	Ministère de l'Equipement, des Transports et du Logement http://www.equipement.gouv.fr/
Germany	Department of Transport http://www.bmvbw.de/
Ireland	National Safety Council http://www.nsc.ie/
Japan	Ministry of Transport http://www.mlit.go.jp/english/index.html
Malaysia	Ministry of Transport http://www.jpj.gov.my/
Netherlands	Ministry of Transport, Public Works and Water Management http://www.minvenw.nl/cend/dvo/international/english/index.html
New Zealand	Transit New Zealand http://www.transit.govt.nz/
South Africa	South African National Department of Transport http://www.transport.gov.za/
Spain	Directorate General of Traffic http://www.mir.es/telonext/index.htm
Sweden	National Road Safety Research Institutes and other related sites http://www.vti.se/edefault.asp

Switzerland	Swiss Federal Roads Authority http://www.astra.admin.ch/
United Kingdom	Department for Transport www.dft.gov.uk
United Kingdom	Scottish Road Safety Campaign http://www.road-safety.org.uk/
United States	National Highway Traffic Safety Administration (NHTSA) http://www.nhtsa.dot.gov/index.html

National Road Safety Research Institutes and other related sites

Czech Republic	CDV: Transport Research Institute http://www.cdv.cz/english/index.htm
Finland	FINNRA http://www.tieh.fi/eindex.htm
Finland	LIIKENNETURVA http://www.liikenneturva.fi/
Finland	VTT http://www.vtt.fi/
France	INRETS http://web.inrets.fr/
Germany	BAST http://www.bast.de/
Ireland	Road Safety Ireland http://www.roadsafetyireland.net/
India	"Keep your head. Wear a helmet" Campaign http://www.geocities.com/acampaigner/
Netherlands	TNO Road-Vehicles Research Institute http://www.tno.nl/homepage.html
Netherlands	Institute for Road Safety Research http://www.swov.nl/en/index.htm
Netherlands	The Association for Safe International Road Travel http://www.asirt.org/
Poland	Motor Transport Institute http://www.its.home.pl/nsite/index_en.php
Switzerland	Institute for Transport Planning and Systems http://www.ivt.ethz.ch/index_EN
United Kingdom	PACTS - Parliamentary Advisory Council for Transport Safety http://www.pacts.org.uk/
United Kingdom	TRL http://www.trl.co.uk/
United Kingdom	Transport Management Research Centre http://www.mdx.ac.uk/www/roadtraffic/welcome.htm

United Kingdom	Highway code for young road users (Arrive Alive) http://www.thinkroadsafety.gov.uk/arrivealive/
Australia	Department of Transport http://www.dotrs.gov.au/
United States	National Highway Traffic Safety Administration (NHTSA) http://www.nhtsa.dot.gov/index.html

Organisations with Experience of Community Road Safety Education

Global Road Safety Partnership: www.grsproadsafety.org
CSIR: Council for Scientific and Industrial Research: www.csir.co.za
IRTE: Institute of Road Traffic Education: www.irte.com
BRAC: Bangladesh Rural Advancement Committee: www.irte.com
ARRB: Australian Road Research Board: www.arrb.com.au

Organisations Involved in Community Health Education

World Health Organisation: www.who.int
AMREF: African Medical and Research Foundation: www.amref.org
Health Link World-Wide: www.healthlink.org.uk
Exchange: a networking and learning programme on health communication: www.healthcomms.org
The Child-to-Child Trust: www.child-to-child.org
The Communication Initiative: www.comminit.com
TALC: Teaching Aids at Low Cost: www.talcuk.org
The International Development Research Centre: www.idrc.ca

APPENDIX D: LESSONS LEARNT FROM THE CASE STUDIES

The following list describes lessons learnt from the four project case studies undertaken in India, Bangladesh, Ghana and South Africa.

- Road safety campaigns are more effective if the community is involved in the problem identification and in the design of countermeasures

- Adopting locally preferred and appropriate programmes facilitates the rapid mobilisation of a community for road safety campaigns

- Human behaviour is a major factor contributing to accident rates, hence it is recommended that road safety awareness campaigns be conducted to improve road users' knowledge, attitude and subsequent behaviour

- Community road safety interventions work best when they're not structured and predetermined. Keeping the interventions flexible to suit local conditions helps make awareness campaigns more effective

- Emphasis should be given on local knowledge, skills and capacity of local people

- The community's commitment to improve road safety is important for a successful campaign

- It is easier to bring notable change in the knowledge and subsequent behaviour of children than that of adults

- Begin any community development programme with problem identification among community beneficiaries to establish a cause-effect relationship. This approach enables community members to discuss their problems with one another and prioritise which road safety interventions are most urgently required and how they can be addressed. The community are often prepared to contribute resources to make the project successful

- As much as possible, external institutions and practitioners should work with beneficiaries only as a facilitator to help them analyse their road safety situation and provide suggestions for possible actions or solutions

- Any community programme should disaggregate the process of problem identification (i.e. split into groups of men, women, children, chiefs, the elite, etc.) because issues affect them differently, and road safety solutions may have to be tailored to specific demographic groups (for example school children perceive the problem of road safety differently from those of market traders)

- Community leaders should, where possible, be the entry point to any community and key players in any development work. Thus, their understanding of any development programme and cooperation are critical for working in the community. During the

intervention, for example, the police can lend their support to the programme by lobbying for the relocation of street vendors

- Use a medium of communication that beneficiaries can easily understand and identify with. For example, educational film clips on road safety were thought to be a better medium for conveying road safety messages to the beneficiaries than the use of FM radio stations and distribution of road safety leaflets

- An attempt to promote and manage effective community programmes requires frequent visits to the communities and working with various groups simultaneously. For any positive impact, there is a need for regular visits

- It is important to know what others are also doing in the same community in terms of community development projects/programmes. This helps to form partnerships with organisations/institutions/groups doing similar work or that have a common understanding of using an integrated approach for achieving their objectives. It is cheaper and more effective working with existing groups

- The problem of road safety should be addressed in the broader context of vulnerability. The case studies indicated that road accident victims are often most vulnerable and of low income groups. Vulnerable people place low priority on road safety. As such, the Poverty Reduction Strategies Papers (PRSP) should incorporate road safety problems in the context of vulnerability

- It can take a long time for effective community development programmes to have an actual impact on accident statistics and in particular attitudinal and behavioural change. Hence, where possible, CRSE programmes should be provided with sufficient time to undertake impact assessment (or for monitoring and evaluation)

- Community programmes should also make use of local best practices. These are models that have been tested over time and have been proven to work. For example, working with existing institutions/organisations that are already working in the community is one such best practice; another is the introduction of road safety education in the school curriculum

- Gaining the confidence of the community is key to a successful working relationship with community members. This means that facilitators of such programmes should understand the culture of the people and adapt to the community. It also calls for patience, tolerance and humility on the part of the facilitator

- Access to information in developing countries is poor. It is important therefore to regularly present available information on road accidents to community members

- It is important to recognise that elections can result in a political 'change of direction' that may cause programmes to be dropped, even if successful.