2

How to assess the situation in your country

How to assess the situation in your country

MODULE 1 EXPLAINED WHY helmets are needed to reduce the fatalities and injuries that are associated with motorcycle and bicycle use. However, before designing and implementing a strong helmet safety programme in your country or region, it is important to assess the situation. Many of the steps that you will need to take for this process will also be necessary when you monitor the helmet programme, once you have it in place. The sections in this Module are structured as follows:

- **2.1 Why do you need to assess the situation?** An effective helmet programme will be based on an understanding of the extent of the problem in a country or region. This information can also be used in support of establishing a programme.
- **2.2 How widespread is the problem of non-use of helmets?** This section describes how to assess the extent of the problem of non-use of helmets among motorcycle users in the project region. It begins with guidance on assessing the extent of the problem of head injuries that result from motorcycle crashes. It then provides a detailed explanation of how to conduct a study to determine what the helmet-wearing rate is in the project area. Finally it provides advice on examining why people do not wear helmets.
- **2.3 How to assess what is in place already:** This section describes the questions that need to be asked in order to collect information on what national processes are underway in the country or region with regard to helmet use. To do this, you will need to find out who is responsible for road safety, and consider all those who may have an interest in a helmet programme. The module guides you on how to collect comprehensive information on the institutional and legislative structures that are in place that might have an impact on your programme, as well as the need to find out about any existing or previous helmet programmes in the project area, in order to learn from these experiences, and to identify the potential resources (financial, personnel, and institutional) for future helmet programmes.

2.1 Why do you need to assess the situation?

Those planning a helmet programme may already have an understanding of some of the information and issues around helmet use in their country or region, and thus may feel they do not need to conduct a situational assessment. Nonetheless, conducting a well-planned and thorough situational assessment is strongly advised prior to starting any new helmet use programme. This does not necessarily imply a prolonged and complicated process, but can mean simply taking the time to search for and compile all the existing relevant information. There are three main reasons for assessing the situation before starting a helmet programme.

- To *identify the problem of lack of helmet use among motorcyclists* and to depict *the scale of the problem*. The information gathered will illustrate how important head injuries are among motorcycle users in the project area; where the greatest need

for helmets is; the cost of motorcyclists not wearing helmets; and the reasons why motorcyclists do not wear helmets. This in turn helps set priorities for action. Similar evidence would be required if you were contemplating putting a bicycle helmet programme in place.

- To provide *evidence* for arguments on why helmet use is essential and why it should be supported. A helmet programme, in order to be successful, needs the backing of both policy-makers and the public. Accurate data – on factors such as helmet use and head injuries among motorcyclists in the project area – will help to show what can be gained by implementing a programme, and provide arguments to convince policy-makers and the general public of the need for a comprehensive helmet-use programme. Module 1 provided background data on the evidence for the effectiveness of helmets in reducing head injuries that can also be used in support of setting up a local programme.
- To provide *baseline indicators* that can be used for monitoring and evaluating a programme. This may include quantitative information such as helmet-wearing rates, as well as qualitative information, such as public opinion on helmet use, or information on compliance with legislation.

2.1.1 The quality of the data

Good data are important in assessing the situation. This means data that are appropriate, accurate, complete, and reliable. In collecting data, one can also identify problems in the data system itself. For example, in collecting data on helmet use in your region, it may become clear that the data on helmet wearing rates are incomplete. Knowledge of such shortcomings in the data can help set realistic objectives as part of your programme.

Nonetheless, in many countries, where reporting systems are not well established or coordinated, some of the necessary data will not be available. Lack of data should not be used as an excuse for inaction or ignoring a county's problem of motorcycle-related head injuries. Some country-level data are always available, no matter how rudimentary these may be, and these can be used as a starting point to develop a strategy for increasing helmet use.

Methods for collecting data will vary and the data obtained will probably also depend on the source. Hospital data on crashes and injuries incurred, for instance, may be biased because they only take into account cases that are actually brought to the hospital. Similarly, police data on crashes will only record those cases the police investigate. However, either of these two sources is a good starting point.

Data collection should ideally be led by a person who has experience in epidemiology. Module 3 discusses the establishment of a working group to develop a helmet programme. The public health expert in the working group is probably the most suited person to take charge of this task.

2.2 How widespread is the problem of non-use of helmets?

The next two sections guide users on how to gather the information needed for assessing the situation. Collecting such detailed data on some of these issues will be an essential part of any helmet use intervention, both as a component of the programme itself, and for the purpose of monitoring and evaluation.

2.2.1 How big is the motorcycle injury problem?

This assessment involves examining data on road traffic crashes – in order to gauge the extent of the problem with regards to motorcyclists, and collecting information on head injuries among motorcycle users.

Collecting data on road traffic crashes

Developing appropriate measures to address a road safety problem requires accurate data on the extent of the problem of road traffic crashes, and in particular, on motorcycle crashes and the head injuries that result. The data should be used to point to the dangers facing motorcyclists, and to emphasize the need for an action programme.

Information will be needed on the incidence, severity and types of crashes, while a thorough understanding of the causes of crashes is also important. The data will also give information on locations with an increased risk for motorcyclists, as well as on riders at increased risk. Such information will be valuable for targeting the programme. For instance, it may turn out that busy urban roads are a high-risk area, or rural roads; young males may be the group found to be at special risk, or self-employed delivery riders.

To collect these data, the following questions need to be asked:

- How many injuries and deaths are there as a result of road traffic crashes in the project region? Note that it is important for the working group to predefine the unit of assessment (see Module 3). For example, this may be the entire country, or it may be a particular province/state, or town or community.
- What is the scale of the problem of motorcycle crashes – in terms of the number of crashes and the number of fatalities? What proportion of the overall road traffic crashes does this make up?
- How does this problem compare, in terms of its scale and the burden on society, with other local public health problems?
- Who are those most likely to be involved in motorcycle crashes?

The indicators to be used here include:

– the number of registered motorcycles as a proportion of all motorized vehicles;
– the rate of motorcycle crashes (per 10 000 vehicles, or per 100 000 people);
– the distribution of motorcycle crashes across different road types;
– the age and gender of riders and passengers involved in these crashes.

Who will have this kind of information?

The traffic police are the most likely source for data on traffic crashes. Such data will probably also be handled by the country's traffic safety agency or transportation department, so that information from these bodies should also be considered "official data".

In practice, full information on these factors is rarely available, as data may not be complete. Issues of underreporting in police records exist even in those countries with a good road safety record.

Other sources of data of this kind might be nongovernmental organizations, universities, research organizations, or insurance companies.

NOTE

Although no two countries or regions will be identical in the circumstances and conditions with regard to motorcycle crashes and head injuries, where data from a country are lacking, it can be helpful to examine what data are available from similar or neighbouring countries. Such data can be used in support of a helmet programme in the country of interest, providing that a clear statement is made that this assumption has been made (that the two countries are similar with respect to certain factors).

BOX 2.1: **Preventing motorcycle deaths in Cali, Colombia**

Motorcyclist deaths have been a significant public health problem in Cali for many years. Vehicle-related injury is the fifth leading cause of death in the Colombian city, with vulnerable road users – pedestrians and motorcyclists – the most affected. In 1993–94, motorcyclists accounted for 30% (1393 cases) of all motor vehicle-related deaths in Cali. Of these, 85% were men, though the passengers injured in these motorcycle crashes were predominantly women. Alcohol consumption was a contributing factor among a large proportion of those injured. Over 40% of casualties occurred on weekends, when there are fewer patrols on the streets.

In 1993, a Fatal Injury Surveillance System was set up through the mayor's office. This has helped not only surveillance efforts, but also the identification of prevention strategies and the assessment of their impact.

Since then, various other steps have been taken. In 1996, a mandatory helmet law for drivers of motorcyclists was introduced, resulting in a decrease in motorcyclist deaths. The following year, the law was extended to include motorcycle passengers as well.

In 2001, three strategies were introduced to reduce motorcycle crashes: a regulation requiring the wearing of reflective vests, obligatory attendance at a driving school following a traffic violation, and a weekend ban on motorcyclists. As a result, the number of motorcyclist fatalities decreased considerably. The reflective vest requirement was withdrawn, for no apparent reason, the following year, but reinstated a year later, along with a new national road code.

An analysis of the trends in motorcycle fatalities since 1996 shows that motorcycle death rates have fallen from 9.7 to 5.2 per 100 000 population, a decrease of 46%. The data suggest that strict enforcement of laws on helmet use has been an important factor contributing to this decrease.

Collecting data on head injuries

Data on head injuries caused by motorcycle crashes can be used to describe the health and socioeconomic impacts of motorcycle-related head injuries to society, and therefore can be useful in making a persuasive argument in support of a helmet use programme. They can also be used as indicators when monitoring a helmet programme. However, it is important to note that there may be a number of other factors outside of the influence of the helmet programme that affect motorcycle-related head injuries. For example, a sudden increase in the number of two-wheelers on the roads may lead to an increase in the overall number of head injuries, such that their usefulness as an indicator of project success may be restricted.

To collect these data, the following questions need to be asked:

- What proportion of motorcycle crashes involve head injuries? Are there data available on the number of motorcycle head injuries, and deaths from such injuries, that can be used?
- What are the economic and social impacts of these crashes and injuries on the country's resources?
- What is the geographic distribution of motorcycle-related head injuries within the region?
- Are there particular population groups in the region that are at increased risk of head injuries resulting from motorcycle crashes – for instance, men, women, young people, or ethnic minorities, a particular occupation?
- What other information is collected on those suffering head injuries as a result of motorcycle crashes? For example, are those injured generally the riders or passengers of two-wheeled vehicles, and do they usually own the vehicle?
- Is there information on helmet use among motorcycle crash victims? If available, this will allow a comparison of outcome of crashes involving motorcyclists with and without helmets.

NOTE

Data collection may itself become a component of your helmet programme. If this is the case, the following are examples of questions that you may want to incorporate into your health facility injury surveillance system, to allow you to get more detailed information on injuries to motorcycle users.

Class: MODE OF TRANSPORT

Definition: How was the injured person travelling at the time of the injury event?

Code choices:

1 Pedestrian
2 Non-motorized vehicle (i.e. cart, bicycle)
3 Motorcycle
4 Car
5 Pickup, van, jeep, minibus (i.e. bus seating less than 10 persons)
6 Truck
7 Bus (seating 10 or more persons)
8 Train
89 Other, including boat and airplane
99 Unknown

Class: ROAD USER

Definition: What was the role of the injured person?

Code choices:

1 Pedestrian
2 Driver or operator of the transport, including bicyclists and motorcyclists
3 Passenger, including motorcycle passengers
8 Other
9 Unknown

Source: This information is extracted from the *Injury Surveillance Guidelines (1)*

Where will these data come from?

Gathering these data will require examining any crash and injury data systems that may exist, including:

- high-quality, national data collection systems on road traffic deaths, injuries and disabilities.
  This might include:
  - Data from death certificates (usually collected by the Ministry of Health)
  - Transport-related death data (through traffic police)
- fatality reports (available from traffic police or justice authorities)
- reports on serious injury (usually available from local hospitals or health professionals). There may be records of injuries to patients and of cases receiving treatment. It is useful to make periodic studies of such data, either from a single hospital or a group of hospitals in an area. By extrapolating a sample of data, an order of magnitude estimate can be obtained of the scale of the problem nationally or provincially. These studies should extract information on:
  - the type of injury – for instance, whether a head injury or body injury;
  - the nature of the motorcycle crash;
  - the types of injuries that most frequently result in death;
  - information on those involved in crashes – such as gender, age and occupation.

Traffic police may also collect some of this information, but generally such data collection results from a collaboration between the police and the transport and health departments.

Although traffic crash data systems usually lack much detail on the injuries sustained, asking the questions may help to either find where this information is available, or at least show that particular data are lacking.

The following table indicates some of the more commonly used sources of data for injuries:

Table 2.1 Possible sources of data on injuries, according to severity of injury

	No injury	Mild	Moderate	Severe	Fatal
Household (community) surveys	■	■	■	■	■
Health clinic records		■	■		
Family doctors' records		■	■		
Emergency room records		■	■	■	■
Ward admission records			■	■	■
Intensive care unit admission records				■	■
Death certificates					■

Other potential sources of data on fatal and severe injuries are listed below.

- For fatal injuries:
  - Autopsy/pathology reports
  - Police reports
- For severe non-fatal injuries:
  - Hospital in-patient records
  - Trauma registries
  - Ambulance or Emergency Medical Technician records

Additional sources of data on specific types of injury are:

- For motor vehicle injuries:
  - Automobile insurance company records
  - Police traffic "accident" reports
  - Department of transport reports
- For occupational (on-the-job) injuries:
  - Workplace records
  - Labour inspector or national safety records
  - National insurance schemes/workers' compensation bureau
  - Rehabilitation centres

Source: This information is extracted from the *Injury Surveillance Guidelines (1)*

NOTE

A rapid way of getting data can be to request hospitals to provide data over a certain time period. In 2001, for example, the Ministry of Public Health in Thailand asked all hospitals in the country to submit data on the road traffic injury patients admitted to hospital every day during the nine-day festival for the Thai New Year (Box 2.2). This task could be carried out by the hospitals without their having to allocate too many resources, since it was just for a short time period. The data collected were used in campaigns to alert the public to the problem of helmets not being used and of the consequent injuries among users of two-wheeled vehicles.

BOX 2.2: **Establishing a motorcycle helmet law in Thailand**

Like many of its neighbours, Thailand has a large and growing population of motorcycle users, with 80% of its registered 20 million motorized vehicles being motorcycles.

In 1992, when helmet use was not mandatory, 90% of deaths resulting from traffic injuries in Thailand were among motorcycle drivers or passengers. Almost all the fatalities were due to head injuries, and very few of the victims had been wearing helmets. That year, data collected on the lack of helmet use and motorcycle fatalities at the Regional Hospital in the north-eastern province of Khon Kaen were used to support a new campaign on helmet use. Initially, the campaign – focused on a limited area around the hospital – involving about 1000 hospital staff who used motorcycles on a daily basis. By the following year, the success of the pilot project led to its expansion to all health departments, and by 1994 to all government departments in Khon Kaen province.

In 1995, discussions by the Khon Kaen campaigners with the Minister of Public Health led to the issue being placed on agenda of the cabinet. The following year, the government passed legislation making motorcycle helmet use mandatory.

The Khon Kaen Provincial Safety Committee, having achieved its prime objective of national legislation, then moved into a second phase. Conducting intensive public education on helmet use and the new law, it also set up an injury surveillance network, providing information to the public and to government on motorcycle crashes and head injuries. In the first year of the new law, the rate of helmet use increased to over 90%. There was a 40% reduction in head injuries among motorcyclists and a 24% fall in motorcyclist deaths.

In 2001, the Ministry of Public Health collected detailed data from every hospital in the country on road traffic crashes during the Thai New Year holiday, a period of national festivities. In this way, it was able to show that the majority of injuries to motorcyclists over the holiday period occurred to those not using helmets. The serious implications of this were widely publicized in the media, a strategy that greatly raised public sensitivity to the issue.

In 2003, the government proclaimed road safety a major item on the national agenda. A national centre for road safety was set up, charged with formulating and implementing the country's master plan on road safety, a key objective of which is the promotion of motorcycle helmet use. Under a recent directive from the government, the governors of all provinces are required to take steps towards implementing the national road safety plan.

Thailand now has a clear national policy on helmet use. Its origins lay in the dedicated local data collection and documentation on head injuries among motorcycle users in a single province, which led to a vigorous and expanding national campaign on helmet use. This, in turn, persuaded other sectors of government to act, with the result that the annual death toll among motorcycle users in Thailand has fallen considerably.

Source : 2, 3

2.2.2 What is the helmet-wearing rate in the area being considered?

Assessing the proportion of motorcycle users wearing helmets correctly will be an important factor to consider in arguing for a helmet use programme. This means asking the following questions:

- What is the proportion of helmet use among the general population (or in the project area)? This rate (per 100 000 population) should also be used as a baseline indicator, against which to evaluate the programme's effectiveness.
- What sort of people are not wearing helmets? Can a breakdown be arrived at in terms of age, gender, whether the person is a rider or passenger, and purpose of the motorcycle trip?
- What is the cost of the non-use of helmets – in terms of injuries sustained by motorcycle users involved in crashes?
- What proportion of those wearing helmets are doing so correctly – in terms of properly fastening the helmets, and using the correct size helmet? The most common forms of incorrect helmet wearing are not properly buckling the helmet, not buckling the helmet at all, and wearing the helmet backwards. The data collected can be used to assess patterns of incorrect helmet use before and after a programme is implemented.

Where will these data come from?

Data on helmet use may be available from the following sources:
– police records;
– records of national or local health authorities;

A hospital-based study conducted in two teaching hospitals in south-west Nigeria revealed that none of the 254 motorcycle crash victims admitted to the hospitals were wearing a helmet at the time of their collision.

Source: 4

– national transportation agency records;
– research studies and surveys (Box 2.3);
– records of vehicle registrations – though this source will probably be of limited use here;
– sales records of helmet manufacturers.

Assessing the extent of the problem of non-use of helmets is a first step towards designing a helmet programme.

NOTE

A study conducted in Londrina, a southern Brazilian city, examined helmet use among motorcycle users who received pre-hospital care following involvement in a crash. The researchers found that helmet use among those affected was 63%. However, there were a number of factors associated with not using a helmet: those younger than 18 were less likely to wear a helmet; alcohol use was associated with not wearing a helmet; and crashes taking place over the weekend were less likely to involve helmeted riders. The researchers concluded that interventions aimed at improving road safety must take into consideration the overall social context in which driving behaviours occur.

Source: 5

NOTE

Asking questions on helmet use

The following are general questions about helmet wearing that can be asked in a community survey:

In the past 30 days how often did you wear a helmet when you drove a motorcycle or motor-scooter?

Coding instructions:
01 All the time
02 Sometimes
03 Never
04 Have not been on a motorcycle or motor-scooter in the past 30 days
05 Do not own a helmet
06 Refused
07 Don't know/unsure

In the past 30 days how often did you wear a helmet when you were a passenger on a motorcycle or motor-scooter?

Coding instructions:
01 All the time
02 Sometimes
03 Never
04 Have not been on a motorcycle or motor-scooter in the past 30 days
05 Do not own a helmet
06 Refused
07 Don't know/unsure

These questions are used to find out how often the respondent uses a helmet when driving or riding as a passenger on a motorcycle. Combined with information on respondent (for example, age group, gender) this information can help identify who does and who does not wear helmets, as well as the extent of non-use of helmets. This in turn is useful in planning a helmet programme and knowing where to most effectively target the programme.

Source: This information is extracted from the *Guidelines for conducting community surveys on injuries and violence (6).*

BOX 2.3: **Measuring helmet-wearing rates: an observational study**

Even if detailed and comprehensive data are lacking, it should be possible to conduct a simple observational study to obtain a good estimate of helmet use. Simple counts of riders and passengers using helmets, at particular locations and at different times of the day, will provide a rough estimate of how many motorcyclists are using helmets and will later be of use in developing actions to be taken.

Because of cost, this type of study is often done on a small scale. If it is already known that a high proportion of crashes and injuries occur on particular roads or in particular areas, it is recommended that the study be carried out in those high-risk locations.

This observation method for calculating helmet-wearing rates in a population could be used for data collection in situational assessment, as well as in an experimental or quasi experimental evaluation design (see Module 4).

Planning period: Before conducting an observational survey, the target population should be clearly defined in terms of who they are, where they live and over what period of time data will be collected. Detailed road maps and data on traffic volume and estimated population prevalence of helmet use from other sources should be collected for the area of interest.

Develop a data collection protocol: This is a detailed written document describing the approach that will be used to collect data. It includes what will be done, how it will be done, who will do it, when it will be done.

Develop data-collection instruments: These include a form or set of forms used to collect information for data collection (e.g. questionnaires, interview schedules) (see Box 2.4). Training material should also be developed for staff carrying out roadside observations.

Sampling: The observed population should be representative of the population of interest in the target area. This means that a random sample of the population should be observed. Although non-random samples may be more feasible in certain situations, for example, observations made at petrol stations, or outside schools, consideration should be given to how generizable or representative the results from such selective samples would be.

If the aim of the study is to document helmet wearing in a particular geographic area, then all road types should be included in the design of the study. Helmet wearing may differ across different road types, for example, riders may be more likely to wear helmets on highways than local roads. The sampling frame should therefore be designed such that it ensures adequate counts to enable estimate of helmet use across different road types, and also ensures a mix of roadway types, volumes and locations (urban, suburban and rural).

All possible roadway segments should theoretically be eligible for sampling. Depending on the size of the target area, the sampling frame may be divided into 2 or 3 stages. For example, to measure helmet use in a province, 3 stages may be employed:

1. Random selection of *primary sampling units* (e.g. the district or equivalent). The number of selected primary sampling units should be calculated in proportion to the estimated Vehicle Kilometres Traveled (VKT) for each sampling unit. For example, if the VKT is low in one district, then proportionally fewer sampling units would be selected from that district than for one with higher VKT. If VKT is not available by district, the primary sampling units may be selected using district population;
2. Random selection of *roads* within each primary sampling unit, ensuring all road types are represented; and
3. Random selection of *observational sites* on the selected roads.

Number of sites: The actual number of observational sites will depend largely on the funding and other logistical issues. If funding is limited it may be more practical to make a greater number of observations from a smaller number of sites. However, consulting a statistician to help determine the appropriate number of sites to give a statistically precise estimate is recommended.

Site selection: Ensure that observational sites are selected randomly from all available sites. This may be done by creating a numbered grid, overlaying it on a map then randomly selecting sites from the grid. Exact observation sites should be determined according to the planned protocol before conducting the observations.

Whenever possible, the observation sites should be near intersections where motorcycles slow down, preferably in the absence of a police officer. For example, sites may be selected at signalised intersections where cyclists are stationary and observations of helmet fastening are easier to conduct.

Narrow roads are better for observing passing traffic; on wider roads, observations may be taken on one side of the road only, for traffic passing in one direction.

The pre-determined protocol should allow for variations in methods for observations and/or site selection. If traffic volume is too heavy at a particular site to accurately record information, the protocol may state that one observer should observe motorcycles with drivers only, while the other observes motorcycles with passengers (and records whether the passenger is wearing a helmet or not). Along with direct observations recorded by observers, a video camera may be used to record traffic flow at sites with extensive traffic flows and where traffic travels at high speeds.

Each site that does not satisfy the selection criteria should have another alternative site on the same road, for example, if the original site or time selected is unsuitable due to inclement weather (e.g. heavy rain), if police are in attendance at a particular site, or if observations may not be made safely at a site (e.g. due to road works).

Helmet observations:

- Project leaders should take safety into account when planning observational work and seek to minimise any likely measurement error.
- Observers should be trained beforehand to remove any possible bias. Consider where/how/who conducts training. Produce a written guideline for observers and others involved in the evaluation and ensure that protocols are adhered to.
- Observations may be made by two or more trained observers. Observations may then be later compared to assess level of agreement between observers.
- Identify a safe, convenient location from which to make observations. For safety and security reasons, observers should work in pairs and they should wear reflective vests.

A helmet chin strap that is loosely fastened is recorded as "incorrect use" when observations of helmet use are being assessed.

- Observations should be made for a predetermined period of time. Time periods should be the same at each site to be able to make comparisons between sites.
- Observations of helmet use may include such categories as helmet use, non-use, incorrect use, and helmet present but not worn. The "incorrect use" category would be recorded where the chin strap is not fastened or loosely fastened. Clearly, depending on the volume and speed of traffic at observation sites it may not be practical to observe and record more information than whether a helmet is worn or not worn (e.g. estimation of age of riders may be too difficult unless this information is gathered through reviewing video footage).

Repeating measurements after the intervention: Repeat observations should be made by the original observers using the same protocol on the same days/times and at the same sites as measurements made before the programme.

BOX 2.4: **Example of a helmet survey questionnaire**

OBSERVATIONAL STUDY

Date: Day: _____ Month: _____ Year: _____

Time: _____:_____ A.M _____:_____ P.M.

Place: _____

Observer: _____

Number of people on motorbike: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ more (specify) _____

	DRIVER		
Sex	Male		Female
Wearing protective clothing?	Yes		No
Wearing a helmet?	Yes		No
Type of helmet *	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ other (specify) _____		
Helmet buckled correctly?	Yes		No
Motorcycle lights on?	Yes		No
Engine capacity of the motorcycle	<100cc	100–200cc	>200cc
License plate number			

	PASSENGER 1	
Sex	Male	Female
Wearing protective clothing?	Yes	No
Wearing a helmet?	Yes	No
Type of helmet *	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ other (specify) _____	
Helmet buckled correctly?	Yes	No

	PASSENGER 2	
Sex	Male	Female
Wearing protective clothing?	Yes	No
Wearing a helmet?	Yes	No
Type of helmet *	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ other (specify) _____	
Helmet buckled correctly?	Yes	No

	PASSENGER 3	
Sex	Male	Female
Wearing protective clothing?	Yes	No
Wearing a helmet?	Yes	No
Type of helmet *	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ other (specify) _____	
Helmet buckled correctly?	Yes	No

* 1. Full face (with chin guard) 2. Open-face (covers ears and neck) 3. Half-face (above ears)
4. Other (e.g. bicycle helmet, construction hat, horse-riding hat, etc.)

Source: Adapted from the Prevalence of safety countermeasures among motorcyclists in the city of Cali study.

2.2.3 Why don't people wear helmets?

A helmet law is unlikely to be successful if people do not obey it, or understand the reason for it, or are unaware of it. Similarly, if helmets are not readily available, or if they are too expensive for most people to afford, helmet-wearing rates are likely to remain low.

Public attitudes to helmet use

It is useful to know how people regard road safety generally, and their attitudes to helmet wearing in particular. This information can help shape a helmet use programme and decide how much should be invested in raising public awareness about the benefits of helmets. The goals of a programme will determine which groups should be surveyed and the questions to be asked. They may include asking the following questions:

- What are people's attitudes to road safety generally?
- Do people understand the benefits of wearing a helmet? Public attitudes on helmet use and helmets laws can therefore also serve as a baseline indicator.
- What is the level of public awareness of the benefits of helmets?
- Why don't people wear helmets? For example, if it is found that motorcycle riders have a negative attitude towards wearing a helmet, or if they are unaware of the laws or of the effectiveness of helmets against injury, then the programme needs to address these issues.
- Who are those most resistant to using helmets? Apart from gauging the public's knowledge and attitudes, this type of information can also help identify which groups are most resistant to using helmets – so that the programme can target them to change their attitudes and behaviour. Information on variables such as age, gender, occupation, ethnicity, etc., would therefore need to be collected.

Where will these data come from?

Data of this type may have been collected as part of a previous helmet programme (see section 2.3.5). There may also be studies conducted:

– by market research firms
– by universities, nongovernment organizations, other agencies working in road safety.

If such data are not available, it might be useful to conduct a public opinion survey to collect this information. If the programme is still being developed, there are likely to be time and budget constraints. Therefore, only a preliminary survey is suggested at this stage, and a more detailed one can be undertaken later. In a preliminary survey, it is most useful to focus just on the geographic area and population group estimated to have the highest risk.

NOTE

Some reasons why people do not wear helmets

© D. Mohan

Difficulties fitting a helmet over certain headgear means that in some places, Sikhs are exempt from the mandatory helmet laws.

The following are examples of reasons for non-use of helmets that have been collected from studies conducted in different countries:

- Young children worry that if they wear a helmet they will be mocked by their peers.
- Motorcyclists feel that they are less likely to have a crash when travelling short distances and they therefore do not need to wear a helmet for such trips.
- Helmets are considered hot and uncomfortable.
- Helmets cannot be worn over some traditional or religious headgear (for example, turbans worn by Sikhs).
- Helmets mess up one's hair or, in some parts of Africa, may not fit over women's often elaborate hairstyles.
- Workers who ride their motorcycles to work worry that if there is no place to store their helmets when they park, they may be stolen if left with the motorcycle.
- Passengers of motorcycle taxis may be reluctant to wear the helmets provided to them by the drivers, due to concern over their cleanliness or infections that might be transmitted through helmet use (for example, head lice).
- In some countries there is a strong social influence of peers and parents on helmet use among adolescents. For example, use of helmets may be influenced by adolescents' beliefs about whether or not their fathers wear a helmet while riding a motorcycle.

© G. Macfadyen

Scorching heat is one reason that motorcyclists often give for not wearing helmets.

Data on availability and cost

The cost and availability of helmets in the area must be assessed to understand if these factors influence people's decision to wear a helmet. The following questions can be used to gather information on these issues:

- How many helmets are made and sold in the region over a specific time period?
- Who sells helmets, and where are these distributers located? Is supply sufficient to meet current demand?
- What are the main brands of helmets sold?
- What is the average retail cost of a helmet of the main brands sold?

Typical indicators on helmets that researchers examine include:

- the number and geographic distribution of helmet manufacturers;
- the number and type of retail brands of helmet;
- the average retail cost of a helmet;
- annual total sales of helmets.

Where will these data come from?

- from helmet manufacturers;
- helmet distributors or suppliers;
- from government department responsible for road safety;
- from those involved in previous helmet programmes.

If these data are not available, and if the budget allows, the most effective method is to contract a market research firm to gather these data. Alternatively, a helmet maker – preferably one serving in the working group – might be able to provide much of this information.

BOX 2.5: **Some common myths about helmets**

Myth: Helmets cause neck or spinal cord injuries.

Fact: Research has proved that helmets conforming to standards and correctly worn do not cause neck or spinal cord injuries.

Myth: Helmets impair hearing and sight.

Fact: Helmets do not affect peripheral vision or contribute to crashes. Helmets may reduce the loudness of noises, but do not affect the ability of a rider to distinguish between sounds. Some studies have indicated that properly fitted helmets can actually improve the ability to hear by reducing the noise of the wind.

Myth: Motorcycle helmet laws violate individual rights.

Fact: All road safety laws require some action from individuals – such as wearing seat-belts, not driving while impaired, strapping a child into a car seat, or stopping at a stop sign. These traffic rules are accepted, because all motorists recognize that failing to obey them could create a serious danger to themselves and others. Motorcycle helmet laws are exactly the same.

Myth: Fatality rates are lower in places without helmet laws.

Fact: Studies in two states in the United States that recently repealed their motorcycle helmet laws showed that deaths from head injuries actually increased following the repeal of the law (see Module 1).

Myth: There is no need to make helmet use mandatory for all: age-specific motorcycle helmet laws are effective/sufficient.

Fact: Age-specific helmet laws are more difficult to enforce, because it is difficult for the enforcement community to single out how old a child is when he or she is riding past on a motorcycle. Consequently, age-specific laws are less effective than those which are related to society as a whole.

Myth: Motorcycles are a small percentage of registered vehicles, thus motorcycle crashes represent a minor burden to society.

Fact: Whether motorcycles make up a small proportion of vehicles (as in some high-income countries) or the bulk of vehicle fleets (as in many Asian countries), the fact that motorcyclists are about 27 times as likely as passenger car occupants to die in a traffic crash and about 6 times as likely to be injured, means that they are a significant problem in all societies where their use is common *(7)*.

The data collected will be used for baseline indicators, against which the effectiveness of the programme can be monitored. For example, data on sales can be used to demonstrate the success of a programme. The availability of helmets will also be a factor in deciding how quickly to phase in enforcement of helmet-use laws, if this is one of the objectives of the programme (see Module 3)

NOTE

Research has shown that, on average, factory workers in low-income countries have to work 11 times as long to earn enough money to buy a motorcycle helmet as their counterparts in high-income countries *(8)*. One way to overcome this is to reduce the cost of helmets to the consumer. This approach has been successfully introduced in Viet Nam by the nongovernmental organization, Asia Injury Prevention Foundation. The Foundation's helmet programme distributes tropical motorcycle helmets free to school-age children, so that they can ride safely as passengers on their parents' motorbikes. To date, over 165 000 helmets have been distributed through the programme to children across the country *(9)*.

The price of helmets may be a deterrent for families with children. Providing free children's helmets is one way of ensuring that all members of the family ride with a helmet on.

2.3 How to assess what is already in place

It is important to assess what laws and regulations on helmet use exist in the project area, how they are implemented, and whether or not any laws and regulations are enforced. For example, if despite a law mandating helmet use among motorcycle users and a defined national helmet standard – the helmet-wearing rate is low and many helmets that are used are substandard, it would be a fair indication that the laws and regulations are not working, or that the enforcement of these laws and standards is inadequate.

Assessing what is in place in your country with regard to existing or previous helmet programmes will help identify the key organizations or people – within government, in the private sector and in civil society – that should be involved in a helmet programme. They will also point to the main sources of potential political and financial

support. As mentioned, this assessment can be conducted at different geographical levels (e.g. country, province/state, town or community) and this should be agreed upon before starting.

The following areas need to be examined:

2.3.1 Who is in charge of road safety, and what funds are there for it?

Describing the general situation in the country is a first step to assessing the situation and whether there is a place for a helmet programme. How such a programme is then implemented will depend on the country's political system. It is also important to consider whether existing laws encourage helmet use, and whether there are funds set aside for road safety programmes that could include helmet use initiatives. The following further list of questions will help formulate an overall picture of the situation.

- Is there a centralized or a regional or federal system of government? Is there provision in the constitution or in national laws for decentralization? If so, to what extent do local authorities engage in decision-making and the making available of funds?
- Which are the main government departments – such as those of transport, health, justice and the police – involved in road safety decision-making and what role does each department play?
- What is the current budget for road safety in your country? Are there priorities in the budget for future improvements in the field of road safety? Are there funds that might be accessed for a helmet programme?

Nongovernmental and private organizations that could contribute to a helmet programme include:

– international organizations and funding agencies – such as the World Health Organization, the World Bank, the Global Road Safety Partnership, the FIA Foundation, and other bodies with road safety expertise, as well as those with funding capabilities;
– private consulting firms;
– domestic nongovernmental organizations – including road safety groups and motorcycle rider groups;
– manufacturers and/or distributors of motorcycles;
– major employers, particularly where staff use motorcycles in their work, and on journeys to/from home.

2.3.2 Who are the stakeholders?

A stakeholder analysis sheds light on the social environment in which the policy will be developed and implemented. Its primary function is to identify all possible partners who might have an interest in addressing helmet use, including those who might initially oppose efforts to increase helmet use or to mandate helmet wearing in the region. Potential stakeholders include government departments, nongovernmental

organizations and institutions that will be affected (positively or negatively) by the new law or standards, local communities, formal or informal groups, as well as individuals (e.g. representatives of work forces, victims of motorcycle head injuries). Stakeholders might also include manufacturers of helmets who might be affected by a new law, regulators, industry bodies and associations, importers and exporters.

The second important function of the analysis is to examine the remit of all of the stakeholders, and to understand the relationships between them. A careful analysis should be made of the influence, importance, and interests of all major stakeholders, as this will facilitate the design of appropriate approaches for involving them. It is especially important to identify supporters and opponents and, moreover, to appreciate the reasons for their respective positions so as to be able to develop a marketable package that satisfies all parties concerned.

With these comments in mind, the key objectives of a stakeholder analysis are thus:

1. To identify key stakeholders, define their characteristics and examine how they will be affected by the policy (e.g. their specific interests, likely expectations in terms of benefits, changes and adverse outcomes).
2. To assess their potential influence on the development, approval and implementation of a helmet programme.
3. To understand the relationship between stakeholders and possible conflicts of interest that may arise.
4. To assess the capacity of different stakeholders to participate in developing a helmet programme and the likelihood of their contributing to the process.
5. To decide how they should be involved in the process to ensure the best possible quality and viability of the programme, in particular:
   - the nature of their participation (e.g. as advisers or consultants, or as collaborating partners);
   - the form of their participation (i.e. as a member of the working group, or as an advisor, or sponsor);
   - the mode of their participation (e.g. as an individual participant or as a representative of a group).

A more in-depth discussion on conducting a stakeholder analysis can be found in *Developing policies to prevent injuries and violence: guidelines for policy-makers and planners (10).*

NOTE

What opposition might you expect in putting in place a helmet programme?

Anticipating opposition or constraints to establishing a helmet programme is useful to pre-empt these problems arising. Opposition might arise due to:

– competing priorities among policymakers
– lack of financial resources
– strong lobbying by groups opposed to increasing helmet use (for example, motorcycle groups).

2.3.3 Is there a helmet use law in place?

As already stated earlier in this section, it is important to know what road safety laws exist and whether they are adequately enforced. Experience has shown that road safety legislation without proper enforcement is unlikely to have the desired effect. In part, this is because road users do not always recognize the risks involved and the benefits to them of the protective measures contained in the legislation. For this reason, they do not always support laws designed to improve their own safety on the roads.

A helmet programme may require the creation of a new law or the modification of an existing one. On the other hand, the existing law may be satisfactory, but may not be properly enforced. Most countries today have some type of law on helmet use. It is therefore useful to begin by reviewing the current state of the laws, as shown in the following checklist:

- What current laws relate to road safety generally?
- Is there a specific law on helmet use? If so, does it apply nationally or locally? Is it up to date?
- To whom does the law apply – for example, to all motorcycle drivers and passengers, and all age groups? Are there specified exemptions?
- Does the law apply to all types of road?
- Does the law specify the type or standard of helmet that should be worn?
- What are the penalties for not complying with the law?
- Is the law enforced? Is it enforced everywhere, and among all groups of motorcyclists?
- How is a new law officially adopted by the government? What are the mechanisms of endorsement?

2.3.4 Is there a helmet standard in place?

It is also very important to know whether the helmets that are available meet approved standards. Such standards might be set by a national body or an international one (see Module 3). Helmets should be sold with evidence that they meet such standards and there should be an active process of checking helmets for compliance

with set standards. The following questions need to be asked:

- Is there a national or international helmet standard specified that helmets should meet?
- Do currently available helmets meet proper standards?
- Do helmet manufacturers abide by this standard?
- Do motorcycle users wear helmets that meet such a standard?
- Are these helmets suitable for local conditions of heat and humidity?
- What is the cost of a helmet that meets recommended standards?

2.3.5 Have any helmet programmes been attempted so far?

In most places where motorcycle use is high, some measures have already been taken to increase the level of helmet use among motorcyclists. Many countries have mandatory helmet laws and public awareness campaigns that promote helmet use. One should examine whether these programmes, laws and campaigns have been effective, and whether they could be improved.

Before launching a new programme, it is important to be aware of and examine the effectiveness of other current programmes, as well as of earlier interventions. Such a review can reduce costs and can suggest better ways to carry out future interventions.

The following checklist may be useful in finding out about what has already been implemented:

- ☐ Are there any other helmet programmes currently in place in your country, or a neighbouring country?
- ☐ Who are the stakeholders of these programmes?
- ☐ Are there helmet use programmes that have been conducted in the recent past?
- ☐ What were the outcomes of these programmes? Are the results available?
- ☐ What were the obstacles/constraints to these programmes? What lessons can be learnt?

NOTE

In Punjab province, Pakistan, a new law on helmets was rigorously enforced very soon after the law was introduced. As a result of the penalties for non-use being increased and many enforcement points introduced, there was a sudden demand for helmets. Stocks of locally manufactured helmets quickly sold out, forcing motorcyclists to purchase the more expensive imported types. As a result, industrial helmets fetched up to twice their regular price, and there was popular criticism of the government for failing to control helmet prices. The case highlights the need to raise public awareness before beginning to enforce legislation, as well as the importance of consulting with suppliers about pending changes, to ensure that supply of helmets can meet demand. Source: 11

BOX 2.6: **Helmet legislation in Kamataka, India**

In the state of Karnataka in southern India there are about 42 million registered vehicles, of which 71% are motorized two-wheelers. The state capital, Bangalore, has 2 million registered vehicles, 75% of which are two-wheelers. In 2004, over 6000 deaths and 50 000 injuries resulted from road crashes in Karnataka, of which around 40% were among riders and passengers of motorized two-wheelers. More than a third of the injuries recorded were brain injuries.

National mandatory helmet legislation is included in the Indian Motor Vehicles Act of 1988. However, implementing this law has been left to the individual states. Despite the proven effectiveness of helmets in protecting against head injuries, many states have yet to implement the legislation. Indeed, in 1995, lobbying by opposition groups in Karnataka led to the repeal of an existing helmet law. In the ten years since, a considerable amount of effort has gone into bringing back the helmet law, including the following activities:

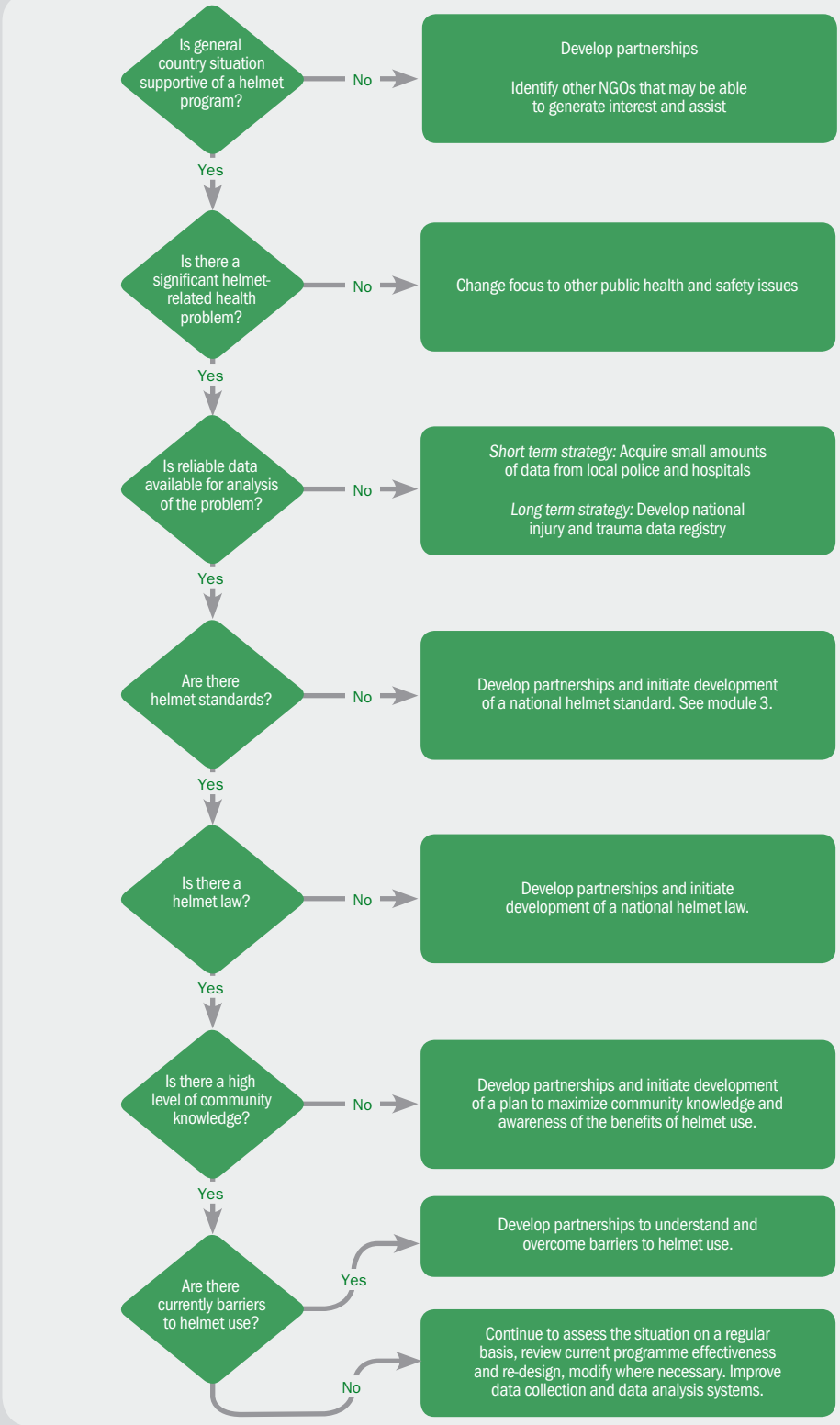
- Raising awareness of the problem. Data from police and hospital sources showed that between 1994 and 2004 the number of deaths and injuries among two-wheeler users rose steadily each year. Making such data publicly available was important in pressing for changes in the law.
- Raising awareness of the evidence. Evidence from around the world on the effectiveness of helmets was published in a report widely circulated among government departments. The report showed that a mandatory helmet law, properly implemented, would lead to fewer deaths and injuries among users of motorized two-wheelers.
- Campaigning by doctors. Many local medical specialists publicly endorsed the helmet legislation.
- Spreading information. The media were instrumental in disseminating information, highlighting the road safety situation in the state and the impact of road traffic injuries on human lives.
- Issuing legal directives. The High Court of Karnataka informed the state government of the need to increase road safety measures, quoting scientific research data in support of a mandatory helmet law. In 2002, the High Court directed the state government to reintroduce the helmet legislation.
- Using the law courts. Environmental and road safety activists used court cases to publicly question the absence of road safety measures, including the lack of a helmet law.
- Countering myths. Public discussion in the media tried to dispel misconceptions about helmets. It was commonly believed, for instance, that helmets were not necessary at low speeds or for travelling short distances, that riders wearing helmets were more careless, and that helmets caused neck injury.
- Moving towards legislation. With fatality rates among users of two-wheelers continuing to increase, policy-makers started to consider a strategy of helmet legislation and its enforcement, rather than rely solely on public education.

The combined effect of these efforts was a concerted move to tackle the lack of helmet use, and an increasing awareness among the public of road safety, and helmet use in particular. As a result, in 2004 the government proposed reintroducing the helmet law, setting a 45–day period for public consultation.

Guidelines are being produced to ensure the smooth implementation of the law, as well as mechanisms to evaluate its impact. Early results appear positive. Within a few days of the reintroduction of the law and its announcement in the media, rates of helmet use rose from a low of under 5% to 30%. It will be important for the government to ensure that enforcement of the law is both visible and non-aggressive.

Source: 12

Figure 2.1 **Using the situational assessment to choose actions**



2.3.6 Using the situational assessment to prioritise actions

Once the situation has been assessed, the process of prioritizing actions can begin. The flowchart in Figure 2.1 assumes that injury prevention and road safety are already recognised as major health and development issues that require political backing. In many countries, this will not be the case. In these places, a network of key groups with a common interest in road safety and the use of helmets first needs to be created. Research has shown that when many groups are involved in improving road safety, and successfully share the responsibilities, the effects are much greater *(13, 14)*.

Summary

- Before designing and implementing a helmet use programme, a situational assessment must be conducted. Asking a number of the questions listed in this module can help identify the particular problems around helmet use in the country, make a strong argument in support of a helmet use programme, and provide indicators which can later be used to judge a programme's success.
- The extent of the problem of non-use of helmets needs to be assessed. This involves collecting data on road crashes and head injuries, as well as on helmet-wearing rates and why people don't wear helmets. This information can be used as baseline information and to identify the main needs of the programme. Some of this information may also be used in an evaluation of the project.
- An analysis of what is already in place with regard to helmet use needs to be conducted. This involves examining who is in charge of road safety in the country or area, the financial resources available for helmet use programmes, the legal instruments already in place, whether a helmet standard is specified, and what other programmes are in place already, or have been conducted in the region or country.

References

1. Holder Y et al (eds). *Injury surveillance guidelines.* Geneva, World Health Organization, 2001 (www.who.int/violence_injury_prevention/publications/surveillance/surveillance_guidelines/en/index.html, accessed 4 July 2006).
2. Chadbunchachai W, Suphanchaimat W. *Principle, strategies and outcome in Traffic Injury Prevention and Control Project in Khon Kaen. (*Report). Khon Kaen Hospital, 1997.
3. Pitayarangsarit S. *Policy choices for the prevention of road traffic injuries in Thailand.* (Report). Bangkok, Thai National Health Foundation Organisation, 2006.
4. Kehinde O, Olasinde A, Oginni L. Safety device utilisation among motorcycle crash victims in southwest Nigeria: a hospital-based study of two teaching hospitals (abstract). Presented at the 8th World Conference on Injury Prevention and Safety Promotion, Durban, South Africa, 2–5 April 2006.
5. Liberatti CLB et al. Helmet use by motorcyclists injured in traffic accidents in Londrina, southern Brazil. *Pan American Journal of Public Health*, 2003, 13:33–38.
6. *Guidelines for conducting community surveys on injuries and violence*. Sethi D et al (eds). Geneva, World Health Organization, 2004.
7. *Traffic Safety Facts: Motorcycle helmet use laws.* Washington D.C., National Highway Traffic Safety Administration. DOT HS 809 908. 2004 (www.nhtsa.dot.gov/people/injury/pedbimot/motorcycle/motorcyclehelmet2005.pdf accessed 27 March 2006).
8. Hendrie D, et al. Child and family safety device affordability by country income level: a comparison of 18 countries. *Injury Prevention*, 2004, 10:338–343.
9. *Students get free helmets.* Viet Nam News. 22 April 2006 (http://vietnamnews.vnanet.vn/showarticle.php?num=04SOC260406, accessed 4 July 2006).
10. Schopper D, Lormand JD, Waxweiler R (eds). *Developing policies to prevent injuries and violence: guidelines for policy-makers and planners.* Geneva, World Health Organization, 2006.
11. Tahir Z. *Helmet prices soar as law comes into force.* The Dawn Group of Newspapers 1 (Lahore, Pakistan). 2 March 2005 (www.dawn.com/2005/03/02/local20.htm, accessed 17 March 2006).
12. Gururaj G . *Head injuries and helmets in Karnataka : Towards helmet legislation and enforcement in Karnataka.* Bangalore, National Institute of Mental Health & Neuro Sciences, 2005.
13. Lonero L et al. *Road safety as a social construct.* Ottawa, Northport Associates, 2002 (Transport Canada Report No. 8080-00-1112).
14. Tingvall C. The Zero Vision. In: Van Holst H, Nygren A, Thord R, eds. *Proceedings of the First International Conference: Transportation, traffic safety and health: the new mobility. Gothenburg, Sweden, 1995.* Berlin, Springer-Verlag, 35–57.