6 ISSUES INFLUENCING THE STRATEGY FOR THE IMPROVEMENT OF ROAD SAFETY IN THE ESCAP REGION

6.1 Main findings from the ESCAP survey

The ESCAP questionnaires were returned from 25 countries from the region and provide a very good overview of the current situation both in terms of accident statistics and in terms of current practices in the Asia-Pacific region. The countries not returning questionnaires were largely from the Pacific region, very small countries with little population (or traffic problems) and some of the ex Soviet block countries. Most of the major countries of the Asia-Pacific region with the largest populations such as India, Pakistan, Indonesia, Philippines, Malaysia, Thailand, Republic of Korea did return questionnaires.

Each year over 235,000 people are killed and many millions more are injured or crippled in road accidents in the Asia-Pacific region. The consequences of these accidents are now costing the developing countries of the region something in excess of US$ 20 billions per year, sums that many of these developing countries can ill afford to lose. There is no doubt that road accidents are a serious and growing problem in the region and that the economic losses arising from such accidents are inhibiting the economic and social development of the region.

The very rapid increases in motorization in the region is leading to increased numbers and severity of accidents. If existing trends continue and no action is taken it is expected that the number of deaths per annum will rise to over 455,000 deaths per year within 10 years.

The review of present practices and activities in road safety sectors in the region indicates that many countries have recognised the need for a multi-disciplinary approach to tackle the problem. However most of them have not yet managed to establish effective coordinating mechanisms to bring about a more effective approach to the safety problem. In most cases where such coordinating organizations (e.g. National Safety Councils or Commissions) exist, they are not adequately funded and do not have sufficient numbers of skilled staff available to provide technical assistance for planning and carrying out effective road safety action plans.

Accident data systems are in use in most of the region but the data collected are not always disseminated to other users. Definitions of “death” vary from country to country some counting only those who die at the accident scene, while others count all those who die within 24 hours, 3 days, 7 days, 30 days or a longer period, which makes comparisons difficult. Within countries standard uniform accident reports appear to be used in a large number of countries but data collected is not always sufficiently detailed to identify precisely the location of the accident or the characteristics of the road users most commonly involved in such accidents. This inhibits the development and implementation of countermeasures to improve road safety.

Third party motor insurance is required in most countries but the insurance industry, with only a few exceptions, is rarely involved in financing or promoting road safety. The true costs of road accidents are not known in most countries and government policy decisions are usually made in the absence of such information.

The survival and recovery of road accident victims depends a great deal on the emergency medical treatment they have received, if any, at the scene, en route to the hospital and in the hospital itself and the speed with which this can be provided. Nationwide emergency phone numbers are only available in a few countries and very few countries seem to have an effective emergency ambulance system in operation. Generally the traffic police are first on the scene and are required to provide any medical assistance before the patient is transferred to hospital. In many countries the proportion of hospital beds

Inadequate emergency medical services lead to high fatality rates
occupied by road accident victims is quite a substantial burden especially on those hospitals which are near the major roads. This is now becoming recognised as a major medical problem in many countries (e.g. the Ministry of Health in Thailand is particularly concerned about the huge resource costs being sustained because of road accident victims).

Safety conscious design and planning of road networks can avoid unnecessary road accidents. Improvement of identified hazardous locations is an important part of reducing the number of road accidents on existing networks, and a number of countries now do such work. Although many countries reported that they do check new road schemes from a safety perspective, very few countries yet apply formal systematic road safety audits to check the designs of new roads or rehabilitated roads before they are built. Failure to do this often results in a continuation of accidents or even an increase of accidents due to the increased speeds with which traffic is now able to travel on the new, better surfaced roads. Despite nominally having access control procedures, inadequate control of the new developments and accesses on to the road network appears to be the norm in the majority of countries and this also contributes to the ongoing problems of safety in the region.

Most of the countries claim to base publicity campaigns on known accident problems and professional advertising agencies are used in a number of countries. However there seems to be little coordination between national and regional campaigns and campaigns are not carried out all year round in the majority of countries. Only a few countries evaluate the effectiveness of campaigns. There is however increasing awareness of the need to have national campaigns of seatbelt use, alcohol, drugs and speeding and there seems to be some evidence of an increase in such activities.

Effective driver training and licensing controls are an important aspect of safe use of the road network because most road accidents occur through human error. Well trained competent drivers on the network will help to improve safety but this requires that drivers be trained in a way which provides them with the skills and abilities to cope in real traffic conditions. Although a number of countries appear to use off-road driving areas for training and partially testing drivers very few countries still carry out the actual test solely “off road” (as done by the Republic of Korea). Most countries have found the need to test basic manoeuvres off the road and to then carry out part of the test in real traffic conditions where the driver has to make judgements and find safe positions within the traffic stream.

Instruction in road safety survival skills is an important part of road safety effort and the earlier in life that this can be learned, the better. Many countries seem to accept that childrens road safety education is an necessary subject for the school curriculum and road safety is now apparently a formal part of school education in quite a number of the Asia-Pacific countries. It is generally taught by teachers and in some countries by the police. Educational materials covering road safety are developed in conjunction with local curriculum developers in around 10 countries and a teachers guide book is available in a similar number of countries. Pre school instruction is also provided in a few countries. In general terms however, it is south Asian countries which seem to be the furthest behind in the area of childrens road safety education.

The state of roadworthiness of the vehicle fleet will have an impact on driving standards as well as affecting the actual outcome of some minor crashes. As with driver licensing, effective testing and vehicle licensing controls are needed to control the situation and to enhance road safety. In many countries, not all vehicles are required to be inspected regularly and this area of work is generally not well conducted in the majority of countries in the region. Only a few countries appear to have fully equipped testing stations with roller brake testers and inspection pits or lifts, but even there, they tend to be only in the major cities. An excellent example of good practice and very effective vehicle testing is Singapore.

Driver behaviour and road safety can be influenced substantially by effective traffic police enforcement. While most countries have separate traffic law enforcement divisions, not all have highway patrols operating along major roads of their country. Generally traffic police have modern traffic equipment patrol cars, speed detection devices and alcohol testers, but legislation is variable on seat belts, alcohol and other issues.

Research and monitoring of accident statistics is vital to ensure that the limited resources available are spent in the areas where
they are most needed. Without such information, it is not possible to judge the effectiveness and value for money of investment in safety. Road safety research is reported as being carried out regularly in about half the responding countries and some countries seem to be particularly active in this field while others seem to do little or nothing (this is discussed further under Section 6.3). However visits and observations indicate that any research which is done tends to be ad hoc and sporadic and often dependent upon 1 or 2 individuals who have taken a personal interest in such matters. Only in very few instances is there adequate support from government.

6.2 Lessons from implemented road safety projects

As part of other current and recent safety studies carried out by the authors we have analysed the effectiveness of aid funded safety projects in the region. There were a total of 84 projects with a road safety content financed by multi-lateral agencies in the Asia-Pacific region. Of these, around 20 were financed by the ADB, 52 were financed by the World Bank and WHO financed 12 visits to different countries for advisory purposes. In addition to that, ESCAP on several occasions has financed individuals to attend seminars in the region and has financed one major regional road safety study.

In terms of regional distribution, there were 9 projects in total undertaken in newly industrialised countries (NIEs), there were 13 projects undertaken in Central Asia, 18 projects undertaken in South Asia region and 35 projects undertaken in South-East Asia, but only 9 projects completed in the Pacific region.

Previous reviews of World Bank and ADB projects undertaken by the authors have identified specific lessons that can be learned from previous implementation experience of the funding agencies.

6.2.1 Coordination of road safety

This normally entails technical assistance to train local personnel and to establish National Road Safety Councils (NRSCs). In general, such efforts have been fairly successful in creating a body dedicated to raising awareness and coordinating the activities of various agencies who influence road safety. A very good example of this is in Fiji where a National Road Safety Council has been established and where financing has been organised through a small levy on the compulsory third party insurance. This funds a small secretariat (including the salaries of an executive director and some other staff). Some specialists have been seconded from key agencies such as the police, and the Ministry of Education. These specialists will be rotated every two years so that each agency will, at some point or other, provide/second some staff for one or two years to the council. For an NRSC to be effective, it is essential that there be some legislative support within a Traffic Act, specifying that the minister may establish a council or else via its own Act. Its powers and responsibilities should be clearly identified and its technical and financial support should be assured. Until an NRSC can be established it is often possible to establish an interim working group composed of the key agencies who will in due course, form members of the council. This allows some coordination to exist until a formal Council can be established with its own secretariat. In the interim period, until a NRSC secretariat is established, the Ministry of Transport or Police (whichever is responsible for safety) can provide a secretariat function for the working group.

6.2.2 Accident data system

Several attempts have been made to develop and implement totally new accident data systems by starting from scratch and developing new software. Most of these attempts have been expensive failures. It is far better to use an existing system such as the very easily adaptable TRL Microcomputer Accidents Analysis Package (MAAP) system. This was specifically designed by the Transport Research Laboratory (TRL) based on its research in developing countries and can be easily modified and adapted to meet the needs of any country. It is generally available free to developing countries and has already been implemented in 10 or 12 countries in the region. Local personnel can be taught how to use the system and to store the data so that at the end of the year, analysis can be carried out and an annual report produced which can be circulated to other agencies who can then be involved in tackling safety problems. The MAAP system can meet the needs of most countries for the first 10 years or so. If necessary, more sophisticated systems can be developed once the basic approach and procedures for systematic collection and dissemination of accident data are in place.
Motor insurance

In most developing countries the motor insurance industry does not get actively involved in promoting and financing road safety activity. However, in recent years it has been found possible to involve the industry in more effective promotion of safety. This has ranged from promotion of specific campaigns and safety initiatives to agreement of annual funding to finance road safety activities through a national road safety council. Any savings in road accidents generally will result in additional profits to the motor insurance industry, therefore it is actually in their interest to fund safety activity. This has been proved with dramatic effects in Australia (especially in Victoria State where the insurance industry funding has played a major role in reducing accidents). It is now also working very effectively in Fiji, where a small levy is added to the third party insurance, which is then passed on by the insurance companies into a separate account for the National Road Safety Council. Such mechanisms can raise hundreds of thousands or even millions of US dollars every year. Examples of where the insurance industry is actively involved in safety in this way include the Republic of Korea where a small percentage of profits are allocated towards the Korean Road Traffic Safety Association; Fiji where about 10 per cent of the third party premiums are paid to the Safety Council; and Victoria State in Australia where the Traffic Accident Compensation (TAC) board provides funding for safety activities, which now runs into millions of Australian dollars per year.

Accident costs

Absence of knowledge on the true monetary costs of road accidents in a country inhibits effective decision making and allocation of resources. In such circumstances it is difficult to identify which countermeasures are most cost effective. Such valuation of road accidents can play an important part in raising public awareness of the losses to the economy and in releasing adequate funding to tackle the problem. Although the research required to provide an evaluation of road accident can take several years to carry out, it is possible to make interim estimates based on a simplified methodology developed by the TRL. Some guidance is available in Overseas Road Note 10 which is available from TRL.

6.2.5 Emergency medical and rescue services

In a few World Bank funded projects, efforts have been made to try to improve the accessibility of medical attention to road accident victims. This has generally been done by providing ambulances to police personnel so that they can at least provide a first stage of assistance to victims until more specialised staff can be available. It is preferable to try to establish a proper emergency ambulance facility supervised by a Ministry of Health, but this is a major exercise for most countries and a very expensive one. Thailand is currently developing such a system and in Fiji, with ADB assistance, preliminary studies have been undertaken to establish a pilot emergency ambulance system.

6.2.6 Road planning and engineering

There is considerable evidence from aid funded projects throughout the region that improving road networks (usually through rehabilitation of existing roads) often results in much higher speeds on the new improved road. Generally roads acquire an improved running surface but other inadequacies such as bends, poor alignment, small communities straddling the road, intersections etc are perhaps left untreated. The end result is that much higher speeds are possible on such roads and quite often the road safety situation deteriorates as a result of this higher speed. In more recent years the World Bank and the ADB have begun to appreciate the potential problems which are being created and now increasingly require safety audits (for checking) of new road schemes to be done by road safety specialists or traffic engineers. This screening of potential or proposed designs enables safety elements to be incorporated at the design stage, which is
much less expensive than having to incorporate features at a later stage once the scheme has been built. The introduction of safety audits and the establishment of specialist traffic engineering or road safety units within highway authorities play a major part in reducing the likelihood of unsafe road networks in future years.

6.2.7 Driver training and testing

Experience in the countries with a good safety record has shown that it is necessary to have both an effective driver training system and a separate driver testing system. The training system is best accomplished through having a system of registered instructors and registered driving schools which can be regulated by government and inspected periodically to make sure they are adequate and meet certain criteria such as training of personnel, knowledge, of equipment, facilities etc. The test itself, should be done on the road at least for part of the test although basic manoeuvres and ability to control the vehicle can be tested off the road or in special facilities. Examiners need to be specially trained and should be periodically monitored to ensure that the consistency of the test is uniform and that the marking is also reasonably uniform across the different personnel. This reduces the likelihood of corruption since inconsistencies in pass / fail patterns can be checked to identify potential problems. Good examples of effective testing systems are available in Singapore, where much of the test and training is carried out off the road, but where the actual test includes some driving on the road network. Similarly China appears to have good off road training and testing facilities, where most of the training and part of the test can be done, while the actual test is carried out on the normal road network.

6.2.8 Vehicle inspection systems

This is a very frequent element, but often unsuccessful component, in aid funded projects. It typically comprises the purchase of vehicles, expensive equipment and, sometimes, construction of vehicle inspection stations. However it rarely includes sufficient funding for institutional development, training and support systems needed to make the system work effectively. A better option may be to minimise investment in government operated vehicle inspection systems, and to fund controls and regulatory mechanisms, institutional capacity and skills to regulate private sector vehicle inspections. An excellent example of a good privately operated but government controlled vehicle inspection system is the one in Singapore.

6.2.9 Road safety research

Road safety research is usually undertaken in universities and research institutes and is normally financed by the country in which the university of research institute is located. In a few instances collaborative research can be undertaken which spans several countries or institutes and which is funded from several different sources, but this tends to be the exception rather than the rule.

There is however one unique organization (Overseas Centre of TRL) whose work was in the past wholly funded by the British Overseas Development Administration (ODA) and whose work of the last 25 years or more has been on the investigation of road safety issues in developing countries. This has encompassed everything from short visits, single country research on specified topics, comparative analyses of safety data from different countries, secondment of staff to carry out longer term research programmes in collaborative countries. Out of 28 potential research institutes and universities in the Asia-Pacific region which were identified as being capable of carrying out road safety research in the region, only a few of them seem to have been seriously involved in road safety research in recent years. Many, such as Bangladesh University of Engineering and Technology (BUET), have done research projects on a few topics because of the particular interest of one or two academics, but there appears to be only 6 organizations which are particularly active in Road Safety research.
on developing countries of the region and these include:

1) Transport Research Laboratory (TRL) Overseas Centre, United Kingdom
2) Central Research Institute (CRRI), India
3) Indian Institute of Technology (IIT), India
4) Traffic Sciences Institute (TSI), (Korean Road Safety Association), Republic of Korea
5) The Korean Transport Institute (KOTI), Republic of Korea
6) National Transport Research Centre (NTRC), Pakistan

The main types of research undertaken in these organizations is briefly described below:

1) Transport Research Laboratory (Overseas Centre), United Kingdom: The TRL Overseas Centre is justifiably recognised as the leading, most active and influential research institution on road safety problems of the developing world. Since 1972 it has carried out many research studies in the Asia-Pacific region and the fundamental aim of such work has been to provide scientifically sound advice on ways of reducing road accidents. This work has been supported by the British Government (ODA) as part of the British aid programme to developing countries and has focussed on 4 main road safety themes over the years, namely:

   a) Development of a Microcomputer based data system (MAAP) to permit better collection and storage of analysis of accident data (now in use in around 20 countries around the world including 10 or 12 of the Asia-Pacific countries).

   b) Low cost road safety remedial measures. Measures have been implemented and developed in a number of Asian Pacific countries including Pakistan, Papua New Guinea, Malaysia, China and Fiji.

   c) Road user behaviour studies covering driver knowledge and behaviour and traffic education of children. Such work has been undertaken in Pakistan, India, and Thailand.

d) Training road safety professionals via the development and distribution of guidelines and training materials on road safety issues, for example, Towards Safer Roads in Developing Countries developed by Ross Silcock and TRL has been distributed to over 6,000 professionals in over 120 countries.

2) The Central Road Research Institute (CRRI), India: The CRRI have about 10 staff currently working on road safety issues. The main focus of their efforts has been to create road safety awareness amongst decision makers in India. Much of their previous work has been in the analysis of accident data to evaluate and describe the road safety situation in India. At present CRRI is also carrying out work on non motorised vehicle accidents, motor cycle helmet usage, design standards and operational practices for median installation and road safety in and around schools.

3) The Indian Institute of Technology (IIT), India: Within IIT the Centre for Bio-Medical Engineering has focussed on problem areas specific to developing countries and has undertaken some assessment of safety policies. Its research work in India has been funded by various Indian Government organizations, as well as International donors such as the US Agency for International Development US Aid, and the World Research Institute. Seven staff are working in the area of road safety. The major areas are injury control including road safety with particular reference to vulnerable road users including pedestrians, bicyclists and motorised 2 wheeler riders.

4) Korean Transport Institute (KOTI), Republic of Korea: KOTI operates under the Ministry of Transport (MOT) and undertakes research projects on behalf of MOT, but most of these tend to be consultancy type projects such as feasibility studies and practical implementation projects. It also provides policy guidance to MOT on road safety issues and has the capability to undertake serious research on road safety issues.

5) Traffic Sciences Institute (TSI), within Korea Road Traffic Safety Association (RTSA) Republic of Korea: The Traffic Sciences Institute (TSI) has only recently been established and operates within the Korea Road Traffic Safety Association. It concentrates on Road Safety Research and covers all sectors of safety. It is not yet very active in terms of
publishing research results but a number of major research studies are underway on the road safety situation in Korea.

6) National Transport Research Centre (NTRC), Pakistan: The NTRC operates under the Ministry of Communications and consists of operational research, road research, urban transport, railway research and training wings. It coordinates and reports widely on transport research within the country.

These 6 research institutions appear to be the most active in carrying out safety related research in the region and some could be potential nodes for the development of more comprehensive research for the Asia-Pacific region.

6.3 Activities of funding institutions and aid agencies in the region

Road safety has been recognised as a serious and growing problem in the Asia-Pacific region and many of the multilateral agencies have, in recent years begun to carry out road safety projects. The major multilateral agencies operating in the Asia-Pacific region and active in road safety are the ADB, The World Bank, WHO and United Nations ESCAP. The World Bank and the ADB are multilateral development banks and provide loans to the countries to improve infrastructure and other development projects. Often as part of the loan or as separate technical assistance, funds are provided to implement road safety projects. ADB has included road safety initiatives in over 20 projects and in total, around US$ 35 millions has been spent in this sector with ADB financing around US$ 20 million and the developing member countries financing around US$ 15 million through counterpart funds. Expenditure on safety activity equipment within a project or on safety related technical assistance associated with the project has rarely exceeded 1 per cent of total project costs.

The World Bank has included road safety initiatives in over 50 projects in the region covering quite a number of countries and in total around US $ 220 millions has been spent in this sector. It is financing around US$ 121 millions and its borrowing countries financing around US$ 99 millions through counterpart funds. As with the ADB projects, expenditure on safety activity equipment within a project, or a safety related technical assistance within the project, rarely exceeds 1 per cent of total project costs.

WHO does not finance large scale safety projects or infrastructure projects. Instead, it tends to assist governments by providing expertise from visiting specialists to try to promote road safety and to promote policy and actions conducive to improving safety. These initiatives are typically specialist road safety advisors visiting the country to provide advice to Government and to Health Authorities. Such visits have been made to a number of the Pacific countries and to Malaysia, Singapore, Thailand, Philippines and other countries of Asia. The WHO therefore is not a major player in terms of funding of road safety activities in the region but does have a very influential role in persuading governments, in particular Health Ministries, to tackle this problem and to recognise its severity.

United Nations ESCAP has limited funds to invest in road safety activities. Its primary role is seen as a catalyst to bring information to relevant decision makers and to facilitate exchange of information, ideas and activities to promote the overall social and economic development of the region. ESCAP has also recognised the growing severity of road safety problems and in the mid 1980s organised a seminar in Bangkok to bring various officials together from the region to discuss accident data systems and road safety problems in general. In 1993 it co-financed and supported the first Asian Road Safety Conference (CARS) in Asia. Prior to the conference ESCAP collected road safety information and statistics from its member countries and presented at CARS comparative data and analyses, in order to demonstrate the scale and nature of the problem affecting the region. In order to define further the problem and to develop strategies, ESCAP has commissioned this current study. ESCAP has a very important leadership role in the region and could be a very influential catalyst to get effective political coordination and activity going in the region. Table 6.1 illustrates the regional distribution of multilateral funded road safety activities.

In addition to the multilaterally funded projects, a number of projects and activities have been financed by bilateral assistance. In discussing bilaterally funded projects, the distinction between projects and research can sometimes be confused. Many of the bilateral funded projects tend to be technical assistance provided by donor countries to countries in the Asia-Pacific region. Many of those projects,
especially in the case of the British ODA, tend
to be researchers providing advice or technical
assistance to the recipient countries. Thus it is
not always possible to separate out bilateral
funded projects “projects” or “research”, and
indeed there is sometimes considerable overlap
between the two in such cases.

The bilateral agencies most active on
road safety in the region are the British
Overseas Development Administration(ODA),
Japan International Cooperation Agency (JICA),
Australian Agency for International
Development (AustAID), and the United States
Agency for International Development (USAID).
The activities of each of these is briefly
summarized below.

1) The ODA has a long and distinguished
history in supporting road safety activities in the developing world through
its funding and support of the TRL
Overseas Unit. Apart from the research
aspects of TRL work, it has, also
supported technical assistance to many
countries in the Asia-Pacific region.
These include Papua New Guinea,
Malaysia, Nepal, Bangladesh and others.
In total ODA has financed around 25 of
the 39 bilaterally funded projects in the
region.

2) The JICA has carried out projects with
some safety content in India, Malaysia,
Singapore, Thailand and Philippines.
Although in most of these projects road
safety was very much peripheral to the
main project, it was a major part of the
project in Thailand.

3) The AustAID has financed projects with
safety content on 4 occasions, twice in
Papua New Guinea, once in the
Philippines and once in Western Samoa.

4) The USAID has provided a very small
amount of financial support for some
safety research at the Indian Institute of
Technology in Delhi but apart from this
has had no involvement in funding safety
activity or projects in the region.

It appears that a number of aid agencies,
both multilateral agencies and bilateral, have
identified road safety as a growing problem in
the countries.

The scope for regional coordinating such
assistance and focusing it on the needs of the
region is very high.

6.4 The need to develop “enabling”
environments

One of the major problems of
implementing safety improvements in
developing countries is that there is no sufficient
awareness, both government and public, nor
enough commitment to improving road safety.
Different countries exhibit different degrees of
readiness or willingness to implement safety
components. This is often linked to the officials’
awareness of the magnitude of the road safety
problem and its importance in relation to other
social economic and political priorities.

The problem is further exacerbated by
the fact that some activities cannot be done
effectively until other preliminary activities have
been undertaken, and until the right climate or
“enabling” environment for road safety has been
established which permits the problem to be
addressed effectively. In the absence of such an
enabling environment, activities will remain
sporadic and ad hoc, so it becomes difficult to
create the momentum necessary for
comprehensive and effective action.

An enabling environment should permit
all parties involved in road safety to contribute
to the activities of road safety. Such enabling
environments need to be created in individual
Asia-Pacific countries, within ESCAP itself and
within the general framework within which the
various participants operate within the region.

6.4.1 Enabling environment required in
individual Asia-Pacific countries

1) Governments of many ESCAP member
countries need to be made more aware
of the high economic and social costs of
ignoring road safety problems. They also
need to be persuaded to allocate
sufficient technical and material
resources to tackle the problem and to
see expenditure on road safety as an
“investment” (with high returns) and not
a “cost”. If there are insufficient local
resources available they need to know
that funding is available in this area from
the development banks and aid agencies.
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<td>52</td>
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*Countries/territories visited during project
2) A multidisciplinary approach is needed in order for the problem to be tackled and there is a need to establish national agency with overall responsibility for coordinating and directing efforts to improve safety. Governments also need to establish a high level interministerial committee or national road safety council with a small full-time secretariat and adequate financial and technical support to ensure that all key organizations play their appropriate role in the development and improvement of road safety.

3) Accurate accident information needs to be available, so that the problem can be properly analysed and the characteristics of the problem can be identified, in order that appropriate countermeasures can be devised to improve the situation.

6.4.2 Enabling environment required within ESCAP

1) Allocation of specific financial, personnel and technical resources is needed to support and encourage the efforts of member countries in this sector (possibly through bilateral support / seconded experts).

2) Promotion / coordination / support for training courses and materials on road safety issues for member countries is needed, so that advice is available for those seeking to develop safety interventions.

3) Leadership initiatives by ESCAP are needed, in coordinating / orchestrating the efforts of other international agencies to focus on the key issues of mutual concern affecting road safety in the Asia-Pacific region, so that problems can be tackled comprehensively and effectively within an agreed coordinated strategy.

6.4.3 The general enabling environment in Asia-Pacific region

1) There needs to be a clear understanding of the problem, recognition of its urgency, development of a regional strategy and a comprehensive Action Plan to tackle the problem over the next decade. These “elements” known collectively as the Regional Road Safety Initiative (RRSI), need to have strong political and financial backing from the major funding institutions active in the region and from the governments of Asian / Pacific countries.

2) There should be a consolidation and pulling together of experience and knowledge about past approaches and countermeasures so that the most promising measures can be identified and replicated. Efforts should be made and mechanisms established to encourage the sharing of technical expertise and information. This should include establishing networks of contacts and safety specialists in the region and encouraging inter-country, inter-regional, and international cooperation amongst safety professionals.

3) The establishment of a common database for all major development agencies active in the region, so that as road safety data and information is collected, it can be pooled and be accessible to all concerned.

4) Annual meetings of the major players (ESCAP, ADB, World Bank, WHO and Bilateral Agencies) to identify and agree a general strategy for development of safety in the region.

5) Senior government decision makers in the region need to be aware of the availability of funding from the major funding agencies and to have knowledge, and if possible, assistance on how to devise and implement road safety action plans.

6) Identification and further development of possible Technology Transfer Centres (TTCs) in Asia-Pacific region where professionals can be sent for specialist training courses, practical experience.

7) A very active road safety research programme needs to be established. This should involve selected research institutes concentrating on different aspects of road safety and widespread dissemination and sharing of results in Asia-Pacific region.
6.5 Harnessing the potential of professionals in Asia-Pacific countries

One of the major problems facing professionals working in the Asia-Pacific region (apart from the fact that they are underfunded and often too few in number), is a lack of access to good sources of advice or reference. Professionals in developed countries have access to libraries and information through professional associations, reference libraries, professional magazines and technical bookshops. For professionals working in developing countries and often working in remote areas, access to such information and technical knowledge is a major problem. Even those who may know of new documents or guidelines becoming available may not be able to afford them on local salaries or may have difficulty paying for them in foreign exchange.

Much of the information available in developed countries, although primarily aimed at users in the more industrialised world, is of relevance and could easily be modified for use in the developing world. The basic principles, ideas, techniques and methods of analysis are often equally applicable although the actual solutions may end up being different in the developing world. Access to such information will harness the energy of professionals already working in the developing world and will recruit an army of professionals to assist in tackling the problem.

ESCAP through its suggested central role of information dissemination and training could have a very important role to play in developing such expertise and knowledge and making such techniques available throughout the region. ESCAP involvement in development and dissemination of materials and in encouragement of the organization of training courses throughout the region could play a major part in improving capability of the region to tackle this problem.

Relevant professional organizations (such as the Permanent International Association of Road Congress (PIARC) and the Road Engineers Association of Asia and Australasia (REAAA)), government institutions and research establishments are recommended to share the knowledge available in existing manuals and guidelines and, if possible, to produce developing country versions of such guidelines and manuals. They could be distributed free to relevant professionals in Asia-Pacific countries. Where this is not possible or where no suitable guidelines exist, the preparation of such documents should be considered.

A good example of the sort of document that is already having fundamental impact upon long term road safety in Asia-Pacific region by encouraging preventive activity is Towards Safer Roads in Developing Countries - Guidelines for Engineers and Planners. This was developed by Ross Silcock and TRL for the British ODA and so far has been circulated free to some 6,000 professionals in developing countries. It introduces such professionals to the basic principles of safety conscious planning design and operation of roads and road networks and describes how to analyse accident black spots and to develop corrective measures. The accompanying instructor pack of guidelines and 200 plus slide pack (charged at cost) allows such concepts to be taught in universities and in in-service training courses. Many other documents exist which could usefully be adapted.

ESCAP could also play a major role in orchestrating and where necessary funding and initiating such initiatives to assist road safety professionals in its member countries. As part of the current project, ESCAP Guidelines have been prepared on Road Safety Action Plans and Programmes and these should be circulated to senior safety professionals in ESCAP member countries. These along with the complementary "Road Safety Guidelines" prepared for ADB as
part of a parallel project offer sound advice and guidance for countries hoping to tackle their road safety problems.

6.6 Harnessing the momentum for safety in funding agencies

In the last decade, the major funding agencies, (the World Bank, ADB and others) have become increasingly aware and concerned about the road safety problems in Asia-Pacific region. Such agencies now often systematically include road safety amongst the issues to be examined when developing road or transport projects in the region. There is thus both a recognition of the problem and a willingness to help finance improvements in such agencies.

Although there is a willingness by funding agencies to include safety components in projects if requested, such components are not always included. The funding agency therefore should actively encourage the government concerned to include a road safety component as part of the project. Such a road safety component should, where possible have a value of between 3-5 per cent of the total value of the road or transport project proposed.

In order for such funding to be effectively used it is crucial that in the country concerned there are individual professionals with knowledge and understanding of how to plan and implement road safety action plans and initiatives. In parallel with the persuasion of aid agencies to include safety components routinely in their road and transport related projects, the development of the capability of professionals in Asia-Pacific region should be considered so that they are able fully to utilise such funds when, and if, they become available. This involves the development of guidelines, the organization of training courses and coordination with other agencies such as ADB in organizing and conducting training courses throughout the Asia-Pacific region covering all necessary sectors of road safety.

As the foregoing shows, there is already increased willingness and interest by the aid agencies in addressing the road safety problems of Asia-Pacific region. ESCAP therefore appears to take a unique opportunity to harness the momentum which already exists in these aid agencies and to focus it on the needs of the region. ESCAP is uniquely placed both in terms of its role and function and its geographical placement to carry out this important role to assist its member countries.

6.7 The price of failure to act

As Chapter 3 has shown, road accidents already result in over hundreds of thousands of deaths per year and millions of persons in the Asia-Pacific region are injured or crippled in road accidents each year. Economic losses due to road accidents in the region are estimated to be already in excess of US$ 20 billion per annum. These annual losses to the economy of countries in the region are greater than the total annual development assistance received by these countries (in all sectors) from the World Bank and ADB combined. Such annual losses clearly inhibit the economic and social development of the Asia-Pacific region. It is estimated that unless effective action is taken in the region the numbers of road deaths will increase to over 455,000 persons per year within a 10 year period. Road accident deaths and casualties are already a significant drain upon the medical resources of a number of countries in Asia-Pacific region (Thailand, Viet Nam) and this will become an increasing problem in more and more countries in the region.