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Corruption Impact Assessment Guidelines

1. Introduction

Corruption is a major obstacle to social and economic development and increases the cost of doing business.

Thailand scored 38 on the corruption perception index in 2014. The index indicates the perceived level of public sector corruption on a scale of 0 (highly corrupt) to 100 (very clean). Thailand's low score affects its ability to attract foreign investment, to provide equal opportunities for its citizens to develop and access business and employment opportunities, and to improve the standard of living.

APEC Leaders acknowledged the threat that corruption poses to good governance and economic growth in the Asia-Pacific when they met in Santiago, Chile in 2004. They agreed that APEC economies should nurture and sustain good governance, economic development and prosperity by working together to fight corruption and ensure transparency.

APEC Leaders endorsed the Santiago Commitment to Fight Corruption and Ensure Transparency. This commitment noted the important role of the United Nations Convention against Corruption as the first legally binding global instrument specifically targeted to fight the scourge of corruption.

Article 5 of the United Nations Convention Against Corruption is pertinent to preventing corruption emanating from legislation and supporting institutional arrangements.

Article 5. Preventive anti-corruption policies and practices

1. Each State Party shall, in accordance with the fundamental principles of its legal system, develop and implement or maintain effective, coordinated anti-corruption policies that promote the participation of society and reflect the principles of the rule of law, proper management of public affairs and public property, integrity, transparency and accountability.

2. Each State Party shall endeavour to establish and promote effective practices aimed at the prevention of corruption.

3. Each State Party shall endeavour to periodically evaluate relevant legal instruments and administrative measures with a view to determining their adequacy to prevent and fight corruption.

The Thailand Government is committed to the implementation of Corruption Impact Assessment as a key mechanism to identify and remove corruption-causing factors in legislation and supporting institutional arrangements.

2. Purpose

The corruption impact assessment is designed to examine, evaluate and remove, where appropriate, corruption-causing factors in laws, regulations and other legal instruments.

The Guidelines are designed to assist government agencies with identifying corruption-causing factors in legislation, regulations and other legal instruments and the supporting institutional arrangements, and to develop and implement appropriate strategies to remove identified corruption-causing factors.

Poorly designed legislation with ill-defined administrative discretionary powers together with inaccessible information about administrative procedures reduces government accountability and transparency. This can lead to inconsistent approaches and the potential for corrupt decisions that favor some individuals, businesses and organizations to the detriment of society.

People, businesses and organizations need certainty, clarity and access to the law so that they know their rights and obligations. Government agencies responsible for the administration of legislation, regulation and other legal instruments need the law to provide clear direction, guidance, scope and boundaries to prevent unfettered and potential abuse of discretionary powers. Appropriate checks and balances, specifically internal and external review mechanisms, are required to ensure responsible government agencies are held accountable.

The corruption impact assessment is based on South Korea's corruption impact assessment approach. The Guidelines outline the appropriate, and in some cases, the inappropriate approach to designing legislative and supporting institutional arrangements to prevent corrupt behavior. The guidance draws upon examples from Thailand and Australian legislation and institutional arrangements.

The contents of the Guidelines include:

Section 3 Corruption-Causing Factors
Section 4 Application and Scope for Reform
Section 5 Evaluation Process and Reporting
Section 6 Evaluation of Ease of Compliance
Section 7 Evaluation of Propriety of Discretionary Powers
Section 8 Evaluation of Transparency of Administrative Procedures
Section 9 Evaluation Checklist

3. Corruption Causing Factors

There are three broad categories of corruption-causing factors:

- Ease of compliance with laws and regulations
- Propriety of administrative discretion
- Transparency of administrative procedures

Table 1 below provides the corruption-causing factors and the criteria used to determine whether the potential for corrupt behavior exists.

Table 1: Corruption-causing factors and criteria

Corruption-causing factors	Criteria
Ease of compliance	-Adequacy of the compliance burden -Adequacy of the level of sanctions -Possibility of preferential treatment
Propriety of administrative discretion	-Clearness of discretionary power -Appropriateness of the scope of discretionary power -Concreteness and objectiveness of discretionary standards
Transparency of administrative procedure	-Accessibility and openness -Predictability -Corruption control system

4. Application and Scope for Reform

The corruption impact assessment guidelines apply to all laws, regulations and other legal instruments.

Table 2 below shows which of the criteria for each corruption-causing factor is targeted at legislative or institutional reform.

All three corruption-causing factors should be evaluated for new and amending laws, regulations and other legal instruments. All of the criteria for the propriety of administrative discretion and the level of sanctions are relatively straightforward assessments and should not impose a burden on government agencies. The adequacy of the compliance burden may require more time and effort to make an assessment.

Institutional reforms can be made to existing laws, regulations and other legal instruments. Government agencies should develop annual plans to prioritize the review of existing legislation, regulations and other legal instruments to ascertain whether improvements can be made to facilitate:

- objectiveness of discretionary standards;
- accessibility and openness;
- predictability; and,
- corruption control system.

These reviews should also identify any matters that can be removed or improved in respect to the ease of compliance and propriety of administrative discretion so that they can be introduced when these laws, regulations or other legal instruments are eventually amended.

Each government department should submit an annual plan to the Office of XXXXX advising of the legislation and the supporting institutional arrangements that will be reviewed over the next 12 months.

Table 2: Scope for Legislative or Institutional Reform

Factors	Criteria	Legislative or Institutional
Ease of Compliance	Adequacy of the compliance burden	Legislative
	Adequacy of the level of sanctions	Legislative
	Possibility of preferential treatment	Institutional
Propriety of administrative discretion	Clearness of discretionary powers	Legislative
	Appropriateness of the scope of discretionary power	Legislative
	Concreteness and objectiveness of discretionary standards	Legislative and/or Institutional
Transparency of administrative procedure	Accessibility and openness	Institutional
	Predictability	Institutional
	Corruption control system	Institutional

5. Evaluation Process & Reporting

The evaluation process for the three categories of corruption-causing factors is discussed in sections 6, 7 & 8.

In each section, the evaluation provides a series of questions and guidance on the appropriate, and in some cases, the inappropriate approach to designing legislative and the supporting institutional arrangements to prevent corruptive behavior. The guidance draws upon examples from Thailand and Australian legislation and institutional arrangements.

Section 9 provides an evaluation checklist that recaps all of the questions in sections 6 to 9.

A briefing should be prepared advising that the new or amending legislation, regulations or other legal instrument has been subject to a corruption impact assessment with a list of the provisions (sections, clauses etc) that have been evaluated, the criteria used, and whether it meets the criteria (yes or no). For those provisions where the answer is 'No', the government agency needs to provide an explanation for not improving the provision in accordance with the

Guidelines. A corruption impact assessment template with a few examples is provided in Table 3.

All of the legislative provisions that have been subject to an evaluation should be notated and a copy provided to the Office of XXXX together with the corruption impact assessment.

Table 3: Corruption Impact Assessment Template

Relevant legislative section	Type of Corruption-causing Criteria	Appropriate	Reason for not removing corruption-causing factor
Section 9	Clearness of discretionary powers	Yes	
Section 9	Appropriateness of the scope of discretionary power	Yes	
Section 9	Objectiveness of discretionary standards	No	The department proposes to develop and publish guidelines for the Minister's discretionary powers. It is considered that establishing statutory criteria in the legislation would restrict the Minister's discretionary powers where circumstances may change.
Section 15	Clearness of discretionary powers	Yes	
Section 15	Appropriateness of the scope of discretionary power	Yes	
Section 15	Objectiveness of discretionary standards	Yes	

A copy of the draft legislation, regulation or other legal instrument with the relevant provisions highlighted should be attached to the briefing and forwarded to the Office of XXXXXXXX for independent assessment.

The Office of XXXXXX will advise whether the corruption impact assessment is compliant with the Guidelines.

The Office of XXXXX should prepare quarterly and an annual report to the Council of Ministers advising on the compliance level for each government department and highlighting any major concerns with specific legislation.

For reviews of legislation and supporting institutional arrangements that are undertaken under a departmental annual plan, the government agency should submit corruption impact assessments to the Office of XXXXX for independent assessment for each review once completed.

The Office of XXXXXX will advise whether the corruption impact assessment is compliant with the Guidelines.

The Office of XXXXX will prepare an annual report to the Council of Ministers advising on each government department's compliance with its annual plan, note a government department's commitment to introduce institutional reforms and highlight any major concerns with specific legislation or institutional arrangements.

6. Evaluation of Ease of Compliance

This section provides an explanation of how to evaluate each of the three criteria in respect to the ease of compliance.

Table 4: Ease of Compliance

Criteria	Contents
Adequacy of the compliance burden	Whether the level of expense and sacrifice borne by people, businesses, organizations to comply with legal responsibilities is appropriate and provides the best option at the least cost
Adequacy of the level of sanctions	Whether the content and level of penalties compared with those pursuant to similar laws are appropriate
Possibility of preferential treatment	Possibility of certain class, business, group or individual enjoying favor or benefit due to the application of laws

6.1 Adequacy of the compliance burden

Does the legislation provide the least cost option?

Has the responsible government agency considered other less burdensome compliance alternatives that meet the policy objective?

Has the responsible government agency undertaken an assessment of alternative compliance approaches?

The compliance burden should be proportionate to the objectives of the law. That is, burdens imposed should be reasonable and fair, in light of the stated objectives, with the compliance mechanisms proportionate and able to be clearly linked to achieving the objective.

Legislation, regulation and other legal instruments impose a broad range of compliance obligations on people, businesses and organizations. The following is a list of common compliance obligation subjects that are prescribed in legislation, regulation and other legal instruments:

- Authorities and Approval to supply goods or services to a third party
- Audits
- Annual returns
- Annual reports
- Prescribed Equipment
- Condition and repair of equipment
- Disclosure of information
- Financial assurances

- Retention of records
- Specifications and equipment
- Maintenance of equipment
- Inspection of equipment
- Protection of equipment
- Security of premises, equipment, processes and systems
- Method of payment
- Prescribed processes and systems
- Standards for the production of goods and services
- Material Safety Data Sheets
- Induction, information, training and supervision
- Hazard identification and analysis
- Risk assessment and control
- Investigation
- Packing, marking and labelling
- Notification of incidents
- Planning for emergencies
- Review processes and systems

Invariably, regulation involves several compliance mechanisms. For instance, licensing, specifications of equipment and record-keeping. Responsible government agencies need to justify each compliance mechanism and show that the compliance mechanism will be effective and play a role in reducing or preventing an economic, social or environmental problem.

Regulatory failure often occurs when government agencies take a risk-averse approach and impose a wide range of regulatory compliance mechanisms to cover every possible incident or event even where there is a low probability of occurrence. This invariably results in some of the compliance mechanisms being totally unnecessary and imposes unnecessary costs on people, business and organizations. These unnecessary compliance costs are often referred to as 'red tape' on the grounds that society at large cannot see any relationship with the compliance mechanism and the policy objective to address a specific economic, social or environmental problem.

Command and control type compliance regulations that have prescriptive requirements for inputs can have unreasonable compliance burdens and can be significantly reduced with alternative approaches without compromising the policy objective. Two examples are provided in Boxes 1 and below.

Box 1: Taxi vehicle standards

The taxi regulations prescribe vehicle standards to ensure public safety. The regulation prescribes a taxi vehicle to be no older than five years of age and would require affected stakeholders to replace their vehicles every five years. This would be deemed a significant compliance burden. An alternative approach that would still achieve the policy objective of protecting public safety would be to require the owners or operators of the taxi vehicle to have the vehicle serviced every 20,000 kilometres or be subject to annual roadworthiness inspections. The cost of the alternative approach would be considerably lower than the replacement of a motor vehicle every five years.

Box 2: Occupational Regulation - Minimum Employee Standards

If a regulated occupation's qualifications are required to protect public safety from criminal behavior, a regulation that prescribes a minimum level of education is likely to exclude persons from employment in the regulated occupation and impose a significant compliance burden on owners and operators of a business that employ the regulated occupation in terms of verifying the educational qualifications of existing and prospective employees. In addition, it may lead to a shortage of labor if the minimum educational standard is set too high. An alternative approach that would still achieve the policy objective of protecting public safety would be to require owners and operators of the business to have existing and prospective employees subject to a police check. This would reduce the compliance burden and achieve the policy objective.

6.2 Adequacy of the level of sanctions

Has the responsible government agency compared the level of sanction on a like-for-like basis with similar laws?

In principle, the level of a penalty should be consistent with the penalties applied in other legislation for offences of a similar nature or a similar seriousness. There may be exceptional circumstances that require different levels of penalties to apply to offences of a similar kind. In these cases, a clear justification needs to be provided for a different penalty regime.

Responsible government agencies should undertake penalty benchmarking to identify penalties applied in other legislation for offences of a similar nature or similar seriousness.

Responsible government agencies should also ensure the penalties are relative to the nature of offence and the seriousness of the offence. Box 3 provides an example of penalties relative to the seriousness of the offence.

Box 3: Example of Penalties relative to the seriousness of the offence
Operating without licence, permit, registration, certification, accreditation-100 penalty units
Fraudulent nature -100 penalty units
Non-compliance with licence or permit conditions -10 penalty units
Relating to false information – 20 penalty units
Disclosure of information -10 penalty units
Failure to obey order -20 penalty units
Failure to obey a directive -20 penalty units
Failure to keep records -5 penalty units

There may be circumstances due to the nature of the risk involved that justifies a higher penalty for an offence. For example, the risk to the community of a person operating as a medical practitioner without a licence would be greater than a person operating as a teacher without a licence. However, it would be expected that the offence for operating without a licence would be the same for similar type professions: doctors, surgeons, dentists and pharmacists.

6.3 Possibility of preferential treatment

Does the legislation exclude a certain class, business, group or individual from undertaking a regulatory activity or participating in a regulated market?

Is the exclusion of a particular group justified in accordance with the policy objective to prevent or reduce an economic, social or environmental problem?

Legislation that is drafted in such a way that it benefits or favors a certain class, business, group or individual can restrict competition, increase costs to other businesses and consumers, and prevent business investment and employment opportunities.

By way of example, Australia had legislation that benefited accountants affiliated with two professional associations to the detriment of accountants affiliated with the third professional association. In Australia, there are three accounting profession associations: CPA Australia, Accounting and Finance Association of Australia and New Zealand and the Institute of Public Accountants (IPA).

It is common practice for many pieces of legislation to require a particular regulatory function or compliance matter to be audited by an accountant. Up until about 2000, most legislation only referenced accountants who were members of CPA Australia or AFAANZ.

A review of the stock of legislation revealed that many pieces of legislation were capable of allowing accountants who were members of IPA. Accordingly, legislative reforms were introduced to enable members of IPA to be recognized in pieces of legislation where they were qualified to undertake the prescribed accounting or auditing function.

7. Evaluation of Propriety of Administrative Discretion

This section provides an explanation of how to evaluate each of the three criteria in respect to the propriety of administrative discretion.

Criteria	Contents
Clearness of discretionary powers	Whether discretion (who has it, the scope of it, process to exercise it) is clearly and firmly defined
Appropriateness of the scope of discretionary power	Whether the scope of discretion given is appropriate in light of international and domestic norm
Concreteness and objectiveness of discretionary standards	Whether discretion related criteria or requirement to exercise it is specific enough to be applied to reality and objective enough to be translated as the same by the third person

7.1 Clearness of discretionary powers

Does the legislation define who has the administrative discretionary power? Doe the legislation define the scope of the administrative discretionary power? Dos the legislation define the process for exercising the administrative discretionary power?

A wide range of decision-making powers can be granted under Thailand laws. These include decisions to

- grant, vary or deny a right, entitlement or benefit;
- to impose or refuse to impose an obligation or requirement;
- that give a direction and
- that make a valuation or declaration.

The two main types of administrative decisions to which administrative law relates are:

Mandatory - for example, if the provision says that, if x occurs, y must decide in a certain way, and
Discretionary – for example, the Minister may decide to grant a licence to an applicant.

Legislation should clearly identify the position that has the discretionary power. For example, the Minister, Secretary-General, a regulatory body or an official.

Legislation may permit a decision-maker to delegate administrative discretionary powers to a third party. For example, *"The Minister may, in writing,*

delegate his or her powers under this Act to an employee performing duties in the Department".

Where the decision-maker decides to delegate his or hers powers, the decision-maker:

- will need to make a formal instrument of delegation specifying who can exercise the power being delegated;
- identify delegates by job title and name;
- may impose conditions on exercising the delegated powers

The legislation should identify the position to have the discretionary powers. Box 4 below defines who has the discretionary power (the Minister), the scope (national security, prevention and remedy on fuel shortage and determination and control of fuel quality) but does not define the process.

Box 4: Fuel Trade Act, B.E 2543 (2000)
Chapter 1 Fuel Trade and Transportation

Section 8. In issuance of the license under Section7, the Minister may set forth conditions relating any trading operation, as he thinks fit. In necessary circumstance relating national security, prevention and remedy on fuel shortage, as well as determination and control of fuel quality, the Minister may issue alteration, change or additional conditions to the conditions that already have been prescribed. In case there is no condition set, the Minister may set forth conditions, as he thinks fit.

As can be seen in Box 5, the legislation does not define the position of who has discretionary power. A competent official is too broad. The legislation does define the scope and process.

Box 5: Machinery Registration Act, B.E 2514 (1971)
SECTION 9. In conducting machinery registration, the competent official shall be empowered to inquire into facts, and to require an applicant to submit and pertinent document or evidence, or summon any person concerned to appear before him for giving statement as may be necessary.

7.2 Appropriateness of the scope of discretionary power

Is the scope of administrative discretionary power appropriate for the responsibility?

As a matter of principle, discretionary powers that have far-reaching impacts should be confined to a Minister. For instance, where the discretionary powers need to take into consideration matters of national security. By way of example, Box 6 below shows the Minister responsible for the Fuel Trade Act (2000) may issue alteration, change or additional conditions to the conditions that already

have been prescribed in circumstances relating to national security, prevention and remedy on fuel shortage, as well as determination and control of fuel quality.

Box 6: Fuel Trade Act, B.E 2543 (2000)
Chapter 1 Fuel Trade and Transportation

Section 8. In issuance of the license under Section7, the Minister may set forth conditions relating any trading operation, as he thinks fit. In necessary circumstance relating national security, prevention and remedy on fuel shortage, as well as determination and control of fuel quality, the Minister may issue alteration, change or additional conditions to the conditions that already have been prescribed. In case there is no condition set, the Minister may set forth conditions, as he thinks fit.

For decisions that affect the ability of a person, business or organization to access a regulated market, profession or occupation, discretionary powers should reside with the Secretary-General, an independent regulator/ authority/registrar. Box 7 below defines the Authority to have discretionary power in relation to approving an application for a motor car traders licence.

Box 7: Motor Car Traders Act 1986 (State of Victoria, Australia)
Section 12 Consideration of application

(1) In considering an application for a licence, the Authority may—
(a) conduct any inquiries it thinks fit;
(b) require an applicant to provide any further information that the Authority thinks fit in the manner required by the Authority;
(c) seek advice and information on the application from any other person or body or source as it thinks fit.
(2) The Authority may engage or appoint any person or body to assist it in considering an application.
(3) The Authority may refuse to grant a licence to an applicant if the applicant does not provide the further information required within a reasonable time of the requirement being made.

Similarly, in Box 8 below, the registrar has discretionary powers to refuse registration of machinery. The Registrar (and not a competent official) should also have the discretionary power to inquire into facts, and to require an applicant to submit pertinent document or evidence, or summon any person concerned to appear before him for giving statement as may be necessary. For practicable reasons, the Registrar may want to delegate some of these powers to an official but proper delegation and accountability documentation should be signed off by the Registrar.

Box 8: Machinery Registration Act, B.E 2514 (1971)

SECTION 8. The principles, procedures and forms of machinery registration as well as the affixing or marking of seal of registration on machinery, and the issue of certificate of machinery registration shall be in accordance with that prescribed in the Ministerial Regulations.

SECTION 9. In conducting machinery registration, the competent official shall be empowered to inquire into facts, and to require an applicant to submit and pertinent document or evidence, or summon any person concerned to appear before him for giving statement as may be necessary. If there is a reason to believe that such application for registration is not correct, the Registrar may refuse such registration by informing the applicant of the reason thereof in writing.

The scope of enforcement discretionary powers should be confined to an authorized officer or an inspector/auditor. These enforcement officers should not in most cases issue fines. Instead, enforcement officers should document and report a breach to an enforcement committee within the responsible government agency. The enforcement committee should be comprised with senior officials and consider the facts of the breach, the culpability and history of compliance by the alleged offender and decide on the appropriate enforcement action. This provides quality assurance for the enforcement process and prevents over-zealous enforcement officers abusing their position.

7.3 Concreteness and objectiveness of discretionary standards

Does the legislation provide statutory criteria to guide the exercise of administrative discretionary power?

If not, has the responsible government agency developed a policy document to provide guidance to decision-makers in exercising their administrative powers?

If yes, is the policy document published and available to the public?

Where administrative discretion is considered necessary in legislation, regulations and other legal instruments the following practices should be considered:

Statutory criteria in the legislation to provide guidance to the decision-maker on those matters that are to be considered in exercising administrative discretion.

If statutory criteria is not included in the legislation, the responsible government agency should consider the establishment of policies that provide guidance to decision-makers in exercising their administrative discretionary powers appropriately, consistently and fairly.

The policy document should be available to the public to ensure the decision-making process is transparent and accountable.

By way of example, the Energy Regulatory Commission has broad powers under section 11 of the Energy Industry Act 2007 to make regulations. As can be seen in Box 9 below, section 64 requires the Minister with the consent of the NEPC to establish policy and guidelines on the tariff determination in the energy industry and section 65 requires the Energy Regulatory commission to establish criteria for determining tariffs based on the specified factors in section 65(1) to (7). These factors provide guidance to the ERC in the exercise of its administrative discretionary powers to determine tariffs.

Box 9: Energy Industry Act, B.E (2007)
PART 2 TARIFFS FOR THE ENERGY INDUSTRY OPERATION

Section 64:
The Minister, by and with consent of the NEPC, shall set the policy and guidelines on the tariff determination in the energy industry operation.

Section 65:
Under the policy and guidelines approved by the NEPC, the ERC shall establish the criteria for determining the tariffs of licensees under each category, based on the following approaches that:
(1) should reflect the actual costs and take into account the appropriate return on investment capital of efficient energy industry operation;
(2) should be at the rates that enhance efficient and adequate energy supply to satisfy the domestic energy demand;
(3) should induce efficiency improvement in the energy industry operation;
(4) take into account fairness for both energy consumers and licensees;
(5) take into account the assistance to the underprivileged power consumers or the electricity supply in order to decentralize prosperity to provincial areas;
(6) have an explicit and transparent tariff calculation and make public the tariffs; and
(7) do not exert unjust discrimination against energy consumers or those who wish to use energy.

Section 66:
The ERC shall regulate the tariffs set by the licensees to ensure their compliance with the policy and guidelines as approved under Section 64 and pursuant to the criteria under Section 65.
In the event that the tariffs are at the rates generally enforced, the ERC shall disclose the formula or the methodology used in the tariff calculation, including the information about the variables used in the tariff calculation, except for the case that the ERC considers such variables are commercially confidential information of the licensees.

Box 10 below provides an example where the Minister for Commerce is provided administrative discretionary powers under the Export and Import of Goods Act (1979) to regulate any of the matters prescribed in section 5 (1) to (6) and to prescribe rates of surcharge for exports and imports. Note the Act provides high level statutory criteria (economic stability, public benefit, public health, national security, public orders or good morals) without any policy guidelines to assist the Minister to determine what constitutes economic stability, public health etc).

The Act also does not provide any guidance on the methodology that should be adopted to determine rates of surcharges for exports and imports.

The Act does make the Minister for Commerce accountable to the Council of Ministers. However, the Council of Ministers consideration and deliberation of the Minister for Commerce's proposed notifications would be made in confidence.

The application of regulatory impact assessment to the provisions in sections 5 & 6 would improve the accountability and transparency of the Minister's administrative discretionary powers. Where the Minister needed to make a notification in an emergency situation to protect public health or national security for example, the Act could require the Minister to publish the reasons for his or her decision and to prepare a regulatory impact assessment within 12 months of making the notification. This would enable the Minister to take decisive action in appropriate circumstances but still hold the Minister accountable for his or her decision.

Box 10: Export and Import of Goods Act, B.E 2522 (1979)

Section 5. In the case where it is necessary or appropriate for economic stability, public benefit, public health, national security, public orders or good morals, or other benefits of the State, the Minister of Commerce shall, with the approval of the Council of Ministers, have the power to issue Notifications in the Government Gazette on any of the following matters:

(1) specifying any goods to be prohibited for export or import;

(2) specifying any goods which require a licence prior to the export or import;

(3) specifying the categories, kinds, quality, standards, quantity, volume, size, weight, prices, trade names, sign, trade marks, origin for the goods to be exported or imported as well as the countries to or from which the goods are exported or imported;

(4) specifying the categories and kinds of goods liable to export or import surcharge;

(5) specifying the goods to be exported or imported to have a certificate of origin, certificate of quality or other certificates pursuant to international conventions or trade practices;

(6) specifying other matters for the benefit of laying down regulations on the export and import under this Act.

The provisions of paragraph one shall apply mutatis mutandis to any amendment or repeal of the Notifications under this section.

Section 6. The Minister of Commerce shall, with the approval of the Council of Ministers, have the power to prescribe the rates of surcharge including the power to revise, amend or repeal the rates of surcharges for exports or imports. The surcharges may be prescribed to be payable in cash or other properties.

8. Evaluation of Transparency of Administrative Procedure

Criteria	Contents
Accessibility and openness	Whether participation by people, businesses, organizations in the exercise of discretion or performance of duties is guaranteed, and there is special system for related information disclosure
Predictability	Whether required papers and steps, administrative handling process, period and results are easy to know and predictable
Corruption control system	Whether a special system to control corruption exists such as one to regulate corruption coming from efforts to avoid compliance burden or to seek favor, coming from face to face encounter during working

8.1 Accessibility and openness

Does the responsible government agency provide guidance documents to enable persons, business and organizations to understand the scope of the administrative discretionary powers? If yes, is the policy document published and available to the public?

Where administrative discretion is exercised does the law enable participation by people, businesses and organizations?

For example, the motor car traders legislation requires a number of requirements to be met to enable a person or business to obtain a licence to operate as a motor care trader. Some of these requirements include matters that require the decision-maker to exercise administrative discretion.

Section 8 (2) of the Motor Car traders Act 1986 sets out the information to be provided in an application for a licence. Section 8(2)(f) states, " *the application must specify the type of trade in motor cars which the applicant proposes to conduct and the financial resources of the applicant to conduct that type of business*".

Consumer Affairs Victoria (CAV) is the government agency responsible for the administration of the Motor Car Traders Act 1986. To enable participation by people, businesses and organizations, CAV has provided a template document on its website specifying the information on the applicant's proposed business plan and declaration of personal finances. This enables people, businesses and organizations to know exactly the information that is required to accompany an application and the information that CAV will draw upon to exercise its

administrative discretion in determining *"the financial resources of the applicant to conduct that type of business"*.

The template document outlines the following requirements

- a copy of a the business plan;
- objective and mission statement;
- background history in the motor car trading industry;
- internal business organization chart;
- business model;
- advertising strategy;
- source of start-up capital;
- amount of start-up capital;
- list of start-up costs;
- declaration of personal finances;
- statement of assets and liabilities; and,
- personal income and expenses

8.2 Predictability

Does the legislation and the responsible government agency provide information on the papers and steps required to persons, business and organizations?

Does the legislation or regulations clearly specify what a person, business or organization needs to provide, the process that will be applied by the responsible government agency, the timeframe that prescribed matters must be completed and the expected outcomes.

The Motor Car Traders Act 1986 is used again to illustrate each of these requirements. Box 11 below provides an example of the required papers and steps for an application for a motor car traders licence.

Box 11: Example of required papers and steps
8 Application for licence
(1) An application for a licence may be made to the Authority by—
(a) a person of or over the age of 18 years; (b) a partnership; or
(c) a body corporate.
(2) The application must be in the form approved by the Authority and must be signed—
(a) if the application is made by a natural person—by that person; or
(b) if the application is made by a partnership— by one of the partners who has the authority of the other partners to sign on behalf of those partners; or
(c) if the application is made by a body corporate—by a director of the body corporate who has the authority of the other directors to sign on behalf of the body corporate.
(3) An application must be accompanied by the prescribed fee for the application and may be accompanied by the first annual fee for the licence.
(5) An application must specify—
(a) the name and address—
(i) if the application is made by a natural person—of that person; or

(ii) if the application is made by a partnership—of each partner; or
(iii) if the application is made by a body corporate—of each director of the body corporate; and
(b) if the application is made by a body corporate—the date and place of incorporation of the body corporate, its corporate name and address of its registered office; and
(c) the date upon which the applicant intends to commence trading in motor cars; and
(d) the address of the place that, if a licence were granted pursuant to the application, would be the principal place of business of the licensee and the address of each other place at which the licensee proposes to carry on business; and
(e) whether any previous applications for a licence had been made or whether the applicant has been a licensed motor car trader or been employed by a motor car trader; and
(f) the type of trade in motor cars which the applicant proposes to conduct and the financial resources of the applicant to conduct that type of business; and
(g) such other matters as may be prescribed.

Administrative Handling Process

Has the responsible government agency provided all of the information required in the predictability section in plain language on their website or brochures?

The legislation should provide guidance on the administrative handling process to enable persons, businesses and organizations to know what is involved in the consideration of a particular matter. Where the legislation is silent, the responsible government agency should publish information on the administrative handling process to provide transparency and certainty to the public.

Box 12 below shows that an application for a motor car traders licence is likely to be forwarded to the Director of Consumer Affairs Victoria and the Chief Commissioner of Police for them to conduct inquiries and report findings that may include recommendations to the Authority. Applicants may also be required to provide the Authority with any consent required by another person or body to verify information relevant to the application. Section 12 of the Act also provides the Authority with broad discretionary powers to conduct any inquiries it thinks fit in considering an application.

The legislative provisions pertaining to an application for a motor car traders licence clearly shows to potential applicants that the administrative handling process may be lengthy and involve consideration by several agencies. This is important information as it signals that the application will not be approved automatically until as such time all of the claims made in an application are confirmed by other bodies.

Box 12: Example of Administrative handling process

11 Notice of application

(1) Where an application for a licence is made in accordance with section 8, the Authority must, except in the prescribed circumstances, give any details of the application that the Authority considers relevant to the Director and the Chief Commissioner of Police.

(2) The Director and the Chief Commissioner of Police, upon receiving details of the application, must make such inquiries in relation to the application as the Director or the Chief Commissioner of Police considers appropriate.

(3) The Director and the Chief Commissioner of Police, after receiving the results of the inquiries, must report to the Authority.

(4) A report may include recommendations.

11A Consent to disclosure of information

(1) The Authority may require a licensee or an applicant for a motor car trader's licence to provide the Authority, at the time of submitting the application or at any time during the currency of the licence, with any consent required by another person or body to enable the Authority to check or confirm information relevant to the licence or application.

12 Consideration of application

(1) In considering an application for a licence, the Authority may—

(a) conduct any inquiries it thinks fit;

(b) require an applicant to provide any further information that the Authority thinks fit in the manner required by the Authority;

(c) seek advice and information on the application from any other person or body or source as it thinks fit.

(2) The Authority may engage or appoint any person or body to assist it in considering an application.

(3) The Authority may refuse to grant a licence to an applicant if the applicant does not provide the further information required within a reasonable time of the requirement being made.

Period

Does the legislation or the responsible government agency prescribe periods for which matters must be decided upon?

The Motor Car Traders Act 1986 does not impose an obligation on the Authority to complete its decision on an application for the motor care traders licence within a specified time. However, the CAV website states that the Authority seeks to make a decision on an application within six weeks. This appears a reasonable timeframe given that the Authority may need to wait for reports from the Director of CAV, the Chief Commissioner of Police or any other person or body.

The disclosure of the timeframe for consideration of an application provides clear information to any person, business or organization considering making an application that the application decision-making process cannot be completed quickly and may involve further investigation with other government agencies.

Results

Does the legislation or the responsible government agency provide clear direction on the matters that determine results or outcomes?

Box 13 below shows the requirements for the results; specifically that the Authority must grant a licence if certain conditions are met (section 13(1)) and that the Authority must refuse an application for a licence if certain conditions have not been met (section 13 (2)) and the matters that determine an application for a licence must be refused (section 13 (4)).

The legislation enables a person, business or organization to clearly understand the matters that are pertinent for the Authority's decision in either granting or refusing an application for a motor car traders licence.

Box 13: Example of results

13 Grant or refusal of licence

(1) The Authority must grant a licence to an applicant if it is satisfied that—
(a) the application complies with this Act; and
(b) the prescribed fee for the application has been paid; and
(c) any required information has been provided by the applicant under section 12; and
(d) there are no grounds for refusal of the application under subsection (4) or (6).
(2) The Authority must refuse an application for a licence if it is satisfied that—
(a) the application does not comply with this Act; or
(b) the prescribed fee for the application has not been paid; or
(c) any required information has not been provided by the applicant under section 12; or
d) a ground for refusal of the application exists under subsection (4) or (6).
(3) The Authority is not required to conduct an oral hearing to determine whether to grant a licence or refuse an application for a licence.
(4) An application for a licence made by a natural person must be refused if it appears to the Authority—
(a) the applicant has not attained the age of 18 years; or
(b) the applicant is disqualified from holding a licence under this Act or an Act providing for the licensing of motor car traders in any other State or in a Territory; or
(c) the applicant is an insolvent under administration; or
(d) the applicant does not have, or is not likely to continue to have, sufficient financial resources to carry on the business of trading in motor cars proposed by the applicant; or
(e) the applicant is not a person likely to carry on such a business honestly and fairly; or
(f) the applicant does not have sufficient expertise or knowledge of this Act and regulations to enable the applicant to carry on such a business; or
(g) the applicant is in any other way not a fit and proper person to be a licensee; or
(h) the applicant does not have, or is not likely to have, premises in which the applicant can lawfully carry on such a business;
(i) the applicant is not likely to maintain effective control of such a business; or

(j) the applicant is a director or officer of a corporation that is disqualified from holding a licence or was a director or officer of such a corporation when the corporation was disqualified; or
(k) the applicant is a represented person within the meaning of the Guardianship and Administration Board Act 1986; or
(l) the applicant has been convicted or been found guilty of a serious offence (whether or not a conviction was recorded) within the last 10 years (unless the applicant has obtained permission under section 29B); or
(m) the applicant has had a claim admitted against the Fund (unless the applicant has obtained permission under section 29A);

8.3 Corruption control system

Does the responsible government agency undertake random and independent audits/monitoring of enforcement outcomes to detect potential preferential treatment?

Enforcement Performance Management & Audit

Responsible government agencies should monitor, evaluate and review the performance of their agency staff that conduct inspections or other enforcement activities.

Data should be kept on each inspector/enforcement officer to identify the number of inspections/enforcements and the identity, location and history of compliance of the inspected person, business or organization. Comparative analysis of the performance of each inspector/enforcement officer will reveal different levels of work output and detection rates of offences. The difference in the detection of offences may be attributable to a range of plausible circumstances.

However, it does provide a starting point for further investigation. This could include using another inspector/enforcement officer, or an officer that is independent of the enforcement agency, to conduct random audits of those inspectors/enforcement officers that have abnormally below-average detection rates of offences. The random audit would involve selecting previously conducted inspections to ascertain whether these persons, businesses or organizations were in fact compliant at the time the inspector visited the premises. Where non-compliance is found, appropriate further investigation would need to be taken to determine whether the inspector/enforcement officer's work is performance related or is as a result of receiving a bribe or other inducement.

Compliance and Enforcement Policy

Does the responsible government agency have a compliance and enforcement strategy?

A government agency publishing a compliance and enforcement policy provides the following advantages:

Enables affected stakeholders that need to comply of the enforcement approach
Makes transparent the level of enforcement applied relative to the size of the offence, culpability and history of the alleged offender;

Box 14 shows excerpts from the key parts of Consumer Affairs Victoria's compliance and enforcement policy. These include a preference for promoting a range of compliance strategies and to use positive remedies (warnings/education) to seek behavioural changes and to only use penalties as a last resort for blatant and repeat offenders. Importantly, the policy also reveals the type of enforcement action that will be applied for low, medium and high breaches and the factors taken into consideration such as the seriousness of the offence and the culpability and history of the alleged offender. This policy provides a clear indication to those persons, businesses and organizations that need to comply of the way in which Consumer Affairs Victoria will administer enforcement.

Box 14: Consumer Affairs Victoria Compliance & Enforcement Policy (excerpts)

Consumer Affairs Victoria will choose those enforcement options that best serve those objectives relevant in each case.

In order to achieve a fair approach to compliance and enforcement, and a strategic use of available resources, the following general criteria are applied to all enforcement activities:

Proportionality
Any enforcement action taken is proportionate to the consumer detriment and the seriousness of the breach.

Consistency
A consistent approach in similar circumstances will be taken to achieve consistent outcomes.

Transparency
So that business and consumers know what is expected of them and what they can expect in their dealings with us.

Targeting
Effective use of limited resources by targeting issues and traders in line with risks, new and emerging issues and enforcement priorities.

Outcomes focussed enforcement

The use of the range of available administrative and civil remedies allows for a more balanced enforcement strategy between seeking behaviour change, including stopping ongoing conduct, and future compliance rather than simply punishing wrongdoing. For example, litigation is costly and not always effective in securing behavioural change compared to an enforceable undertaking, where a trader agrees to ongoing positive obligations.

Where breaches are blatant, repeated, and cause significant detriment, Consumer Affairs Victoria will target those traders for prosecution. However, we will also look at matters from the perspective of choosing those matters where action can have a broader market impact by increasing compliance in a particular industry sector.

Compliance strategies and options

Consumer Affairs Victoria adopts an integrated, whole of organisation approach to promoting voluntary compliance with consumer regulation. Consumer Affairs Victoria publishes a range of industry guidelines on the requirements of consumer legislation.

The guidelines encourage greater levels of voluntary compliance as they illustrate both what is expected of traders, and the consequences of not complying.

An extensive strategy of awareness raising and negotiation has achieved improved compliance levels in various industries with the provisions regulating unfair contract terms.

Consumer Affairs Victoria also employs many other proactive compliance programs in other areas, which may include the following elements:

- Promoting self-regulation where appropriate, and industry compliance schemes.
- Trader information and education sessions.
- Trader visits, audits and monitoring.
- Industry newsletters.
- Engagement with businesses on compliance issues via conferences, forums, trade association liaison, industry newsletters.
- Trader awards programs.
- Consultation on legislative review and industry-specific issues.

Informed and empowered consumers also drive compliance with consumer law, by seeking redress when a transaction goes wrong. Consumer Affairs Victoria assists consumers to exercise their rights through the provision of extensive consumer information, advice and education.

Selection on matters for investigation and enforcement

Consumer Affairs Victoria identifies far more issues and contraventions of legislation than it has resources to fully investigate. In light of this, resources must be allocated where we can best influence non-compliant conduct. In some cases, dispute resolution or low-level compliance activity may be pursued where this is likely to secure redress for the consumer. Similarly, enforcement action may be pursued where there is high likelihood of success.

This section sets out how Consumer Affairs Victoria selects matters for compliance and enforcement action. Matters may originate from consumer complaints, or from issues identified through market monitoring.

Initial Assessment

Within Consumer Affairs Victoria's jurisdiction
Extent of consumer detriment
Seriousness of the conduct
If serious, is the conduct ongoing?
Consideration of Consumer Affairs Victoria's enforcement priorities
Culpability and history of alleged offender
Special circumstances including consumer vulnerability
If outside jurisdiction – refer to appropriate agency
If no breach, insufficient evidence, technical breach etc – refer to Consumer Affairs Victoria dispute resolution

Priority

There are three priority levels: low medium and high.
For low priority cases, low-level compliance activities may occur.
For medium and high priority cases, an investigation may occur.

Enforcement Options

Typically, enforcement options for low priority, low-level compliance include:

- Dispute resolution
- Formal written warning
- Trader meeting

Typically, enforcement options for medium priority investigations include:

- Public naming
- Infringement notice
- Adverse publicity order

Typically, enforcement options for high priority investigation include:

- Enforceable undertaking
- Other administrative remedies, such as:
- Disciplinary action
- Injunction
- Asset freezing order
- Cease trading injunction
- Criminal prosecution

Source: consumer.vic.gov.au

Code of Conduct

Has the responsible government agency established a code of conduct for enforcement staff?

A government agency can establish a code of conduct to set out the ethical and professional dealings of its inspectors, auditors and other authorized personnel to conduct enforcement activities. In particular the code of conduct should cover conflict of interest and the acceptance of gifts or other inducements. The purpose of the code of conduct is to link it to an enforcement officer's employment agreement so that appropriate disciplinary action can be taken where breaches are detected and proved.

Box 15 below provides an example of the provisions pertaining to conflict of interest and acceptance of benefits in the New South Wales Food Authority's food safety auditor's code of conduct.

Box 15: Regulatory Food Safety Code of Conduct (excerpts)

Conflict of interest

Auditors, must at all times, avoid conflicts of interest. In the event of an auditor learning that an actual or apparent conflict of interest exists, the auditor shall immediately inform the relevant officer within the Authority. After investigation, the relevant officer will advise the auditor whether they may continue to audit the food business. Following this, the matter must be detailed in writing by the auditor to the Authority.

Examples of situations that are considered to constitute an actual or apparent conflict of interest include:

- The auditing of a business where the auditor has provided specific direction to the business in how to manage food safety risks associated with its food safety program, this may or may not include drafting the business's food safety management system. Situations where a regulatory food safety auditor has provided general food safety advice to a business, providing this advice does not include or provide specific direction to the food business in how to manage a food safety risk associated with its food safety program, should not be considered a conflict of interest.
- Arranging food safety training or participating as a food safety trainer in sessions where company specific solutions to food safety risks associated with a company's food safety program are discussed or provided. It should be noted that discussing non-conformances discussed during an audit should not be considered a conflict of interest. It should be further noted that a conflict of interest is not considered to occur where such information is limited to general information freely available in the public domain, and company specific solutions are not provided or discussed.
- Food businesses where the regulatory food safety auditor has a direct financial interest. It should be noted that remuneration provided to an auditor for auditing a food business does not constitute a conflict of interest.

- Preferential treatment of a person, organisation or interest (including but not limited to pecuniary, commercial, political or religious interests) during a regulatory audit as a result of a regulatory auditors' previous association with that person, organisation or interest.
- Food businesses where the regulatory auditor, or a close family member or associate of the auditor, has a direct relationship with a direct competitor of the business being audited. In this situation, the proprietor of the food business should be notified of the relationship, and allowed to decide whether the regulatory auditor may continue the audit of their business. Should the proprietor refuse the auditor, the auditor should inform the appropriate the Authority, who will then decide on an appropriate course of action.

Failure to declare a conflict of interest may result in the suspension or cancellation of an auditor's approval by the Authority.

Acceptance of benefits

Any auditor found to accept gifts will be subject to immediate investigation by the Authority that may lead to the suspension or cancellation of their approval. The investigation may lead to criminal prosecutions being commenced against the auditor.

This does not include refreshments such as tea and coffee or basic meals such as sandwiches provided to an auditor while conducting an audit of a food business. Any attempt made by a client to offer a gift to an auditor, where the intent of offering the gift may reasonably be perceived to be an attempt to influence an audit outcome, and/or a response to a non- conformance finding, must be reported to the Authority as soon as possible.

Source: New South Wales Food Authority (Australia)

9. Evaluation Checklist

Evaluation Checklist	
Corruption Causing Factors	**Yes/No**
Ease of Compliance	
1. Adequacy of the compliance burden	
Does the legislation provide the least cost option?	
Has the responsible government agency considered other less burdensome compliance alternatives that meet the policy objective?	
Has the responsible government agency undertaken an assessment of alternative compliance approaches?	
2. Adequacy of the level of sanctions	
Has the responsible government agency compared the level of sanction on a like-for-like basis with similar laws?	
3. Possibility of preferential treatment	
Does the legislation exclude a certain class, business, group or individual from undertaking a regulatory activity or participating in a regulated market?	
Is the exclusion of a particular group justified in accordance with the policy objective to prevent or reduce an economic, social or environmental problem?	
Propriety of Administrative Discretion	
4. Clearness of discretionary powers	
Does the legislation define who has the administrative discretionary power?	
Does the legislation define the scope of the administrative discretionary power?	
Does the legislation define the process for exercising the administrative discretionary power?	
5. Appropriateness of the scope of discretionary power	
Is the scope of administrative	

discretionary power appropriate for the responsibility?	
6.Concreteness and objectiveness of discretionary standards	
Does the legislation provide statutory criteria to guide the exercise of administrative discretionary powers?	
If not, has the responsible government agency developed a policy document to provide guidance to decision-makers in exercising their administrative discretionary powers?	
If yes, is the policy document published and available to the public?	
Transparency of Administrative Procedure	
7. Accountability and Openness	
Does the responsible government agency provide guidance documents to enable persons, business and organizations to understand the scope of the administrative discretionary powers?	
If yes, is the policy document published and available to the public?	
8. Predictability	
(a)Does the legislation and the responsible government agency provide information on the papers and steps required to persons, businesses and organizations?	
(b)Does the legislation or the responsible government agency prescribe the administrative handling process?	
(c)Does the legislation or the responsible government agency prescribe periods for which matters must be decided upon?	
(d)Does the legislation or the responsible government agency provide clear direction on the matters that determine results or outcomes?	
Has the responsible government agency provided all of the information required in (a) to (d) in plain language on their website and/or brochures?	
9. Corruption Control System	

Does the responsible government agency undertake random and independent audits/monitoring of enforcement outcomes to detect potential preferential treatment?	
Does the responsible government agency have a compliance and enforcement strategy?	
Has the responsible government agency established a code of conduct for enforcement staff?	

Improvements to the Implementation of Regulatory Impact Analysis Tools

A number of improvements were undertaken during the course of the RIA project as a result of the following suggestions:

1. Corruption Impact Assessment

Indonesian delegates at the first RIA Workshop suggested the development of corruption impact assessment guidelines. The corruption impact assessment is designed to examine, evaluate and remove, where appropriate, corruption-causing factors in laws, regulations and other legal instruments.

The Guidelines are designed to assist government agencies with identifying corruption-causing factors in legislation, regulations and other legal instruments and the supporting institutional arrangements, and to develop and implement appropriate strategies to remove identified corruption-causing factors.

The corruption impact assessment is based on South Korea's corruption impact assessment approach and draws on Thailand and Australian legislative examples. The contents of the Guidelines include:

- Corruption-Causing Factors
- Application and Scope for Reform
- Evaluation Process and Reporting
- Evaluation of Ease of Compliance
- Evaluation of Propriety of Discretionary Powers
- 8Evaluation of Transparency of Administrative Procedures
- Evaluation Checklist

2. Public Consultation Guidelines

Ministry of Justice/National Economic and Social Development Board suggested the development of public consultation guidelines. Martin Oakley prepared a set of guidelines based on Malaysia's public consultation guidelines but also added a practical example of the type of stakeholders consulted in the proposed social regulation banning children less than six years of age being transported on a motorcycle.

3. Use of Case Studies a RIA Template

Cambodia and several other APEC member delegates suggested the development of case studies and a RIA template. Ex ante and ex post RIA case studies were prepared for the RIA Guidelines and practical case studies were used for other documents such as the public consultation guidelines, corruption impact assessment guidelines, regulatory compliance cost measurement framework and the training course module.

4. Multi-Disciplinary Approach to RIA preparation

Martin Oakley, Niskin Enterprises suggested using the Australian National Competition Policy Legislative Review model approach to the preparation of RIA to ensure independence in the review process with the establishment of multi-disciplinary teams from different departments.

5. Case Study RIAs to complement RIA Guidelines

Martin Oakley, Niskin Enterprises suggested the preparation of a case study RIA to form part of the RIA Guidelines. An ex ante RIA case study was prepared on the proposed ban on children less than six years of age being transported on motorcycles.

Ministry of Justice/National Economic and Social Development Board suggested the preparation of an ex-post RIA case study to complement the ex ante case study RIA. Martin Oakley, Niskin Enterprises prepared an ex-post RIA case study on company registration regulation.

6. Regulatory Compliance Cost Measurement Framework

Martin Oakley suggested the preparation of a Regulatory Compliance Cost Measurement Framework. The purpose of the framework is to make government departments aware of the costs regulations impose on individuals, businesses and organizations and to design compliance obligations that are the minimum necessary to achieve the policy objective.

The framework provides guidance on how to calculate compliance costs and to assess the efficiency and effectiveness of the compliance design with the following sections:

- Overview of the type of regulatory compliance costs that need to be measured: direct financial costs, administrative costs and substantive compliance costs.

- Costing regulatory activities with five key steps for calculating compliance costs (with formulas and examples).

- Compliance design efficiency assessment (analysis and international benchmarking).

- Reporting requirements (certificate of compliance and the role of the Office of Regulation Reform.

- Template for compliance cost measurement and compliance design efficiency assessment.

Ministry of Justice suggested the RIA requirements for new legislation to be incorporated into the Draft Constitution. The inclusion of the RIA requirements in the Draft Constitution is subject to a referendum to be held in August 2016.

General observations

The APEC RIA project was initially confined to the preparation of RIA Guidelines, RIA implementation strategy, RIA curriculum and training.

However, the input of APEC member countries at the first and second workshops together with suggestions from the Ministry of Justice and the National Economic and Social Development Board, expanded the scope of the project to add complementary tools to assist Thai Government officials to develop a better understanding of the application of the RIA Guidelines. Accordingly, the APEC approach facilitated substantial improvements to the original project work plan.

The establishment of the RIA tools: RIA Guidelines, Ex ante and Ex post RIA case studies, regulatory compliance cost measurement framework, public consultation guidelines, corruption impact assessment guidelines, RIA implementation strategy, RIA curriculum and RIA training presentation provide the foundation for the implementation of RIA across the whole of Thailand Government.

However, the forthcoming roll-out of the RIA requirements poses a significant challenge to ensure that Thai Government Ministries, departments and regulators comply not just with the RIA requirements but also seek to deliver high quality RIA for new and existing regulation.

This will require ongoing monitoring by a central agency and a willingness to work together with government agencies to make adjustments and improvements, where necessary, to ensure the longevity of the RIA process in Thailand's regulation-making processes.

Regulatory Compliance Cost Measurement Framework

1. Introduction

The purpose of the regulatory compliance cost measurement framework is to make government departments aware of the costs regulations impose on individuals, businesses and organizations and to design compliance obligations that are the minimum necessary to achieve the policy objective.

All regulatory costs arising from new legislation or amendments to existing legislation must be quantified using the regulatory compliance cost measurement framework. Legislation includes Bills, Ministerial regulations, rules, regulations, orders and any other legal instrument that imposes a legal obligation on an individual, business or organization.

Taxes are excluded from the regulatory compliance cost measurement framework. However, costs incurred by regulated entities to demonstrate compliance with taxation (record-keeping and reporting costs) are included in the framework.

The regulatory compliance cost measurement must be completed and submitted to the responsible decision-maker prior to a decision being made to introduce new legislation or to amend existing legislation. To ensure accountability, a Certificate of Compliance must be signed by the responsible departmental head and the responsible Minister.

The signed compliance cost measurement report together with the Certificate of Compliance must be published on the responsible Ministry website and the Office of Regulation Reform website.

The regulatory compliance cost measurement framework provides guidance on how to calculate compliance costs and to assess the efficiency and effectiveness of the compliance design.

The Framework provides the following information:

Section 2: Overview of the type of regulatory compliance costs that need to be measured: direct financial costs, administrative costs and substantive compliance costs.

Section 3: Costing regulatory activities with five key steps for calculating compliance costs (with formulas and examples).

Section 4: Compliance design efficiency assessment (analysis and international benchmarking).

Section 5: Reporting requirements (certificate of compliance and the role of the Office of Regulation Reform.

Section 6: Template for compliance cost measurement and compliance design efficiency assessment.

2. Overview of the Regulatory Compliance Cost Measurement Framework

The Framework requires consideration of the following regulatory compliance costs:

- Direct financial costs
- Administrative costs
- Substantive compliance costs

2.1 Direct financial costs

These are charges prescribed in regulation that are payable to the government such as administrative charges, licence, permit, registration, accreditation and approvals fees, levies, and mandatory insurance premiums (where remitted to government).

2.2 Administrative costs

Administrative costs are incurred by regulated entities to demonstrate compliance with the regulation. Some examples of administrative costs are:

- Costs of making, keeping and providing records
- Costs of notifying the Government of certain activities
- Cost of conducting tests
- Costs of making an application
- Compliance costs associated with financial costs, including the costs incurred in complying with government taxes, fees, charges and levies (excluding the actual amount paid – for example the time taken to pay a licence fee is a compliance cost.

Administrative costs include the time taken to demonstrate compliance with the regulation as well as the associated travel costs (for instance, the costs of traveling to a particular location to submit a form or waiting in a queue in order to comply with a requirement).

2.3 Substantive compliance costs

Substantive compliance costs are costs incurred to deliver the regulated outcomes being sought. Some examples of substantive compliance costs are:

- Costs of providing training to employees to meet regulatory requirements
- Costs of purchasing and maintaining plant and equipment

- Costs of providing information for third parties, such as providing financial statements to consumers
- Costs of operation (for example, energy costs)
- Costs of professional services needed to meet regulatory requirements (for example legal, tax and accounting advice, and specialist auditing/consulting in areas such as environment, occupational health and safety or general compliance systems

3. Costing regulatory activities

There are four key steps to costing regulatory activities as shown in Box 1 below.

Box 1: Key Steps

1. Define the regulatory activities that impose a compliance cost

This requires working through the regulations and identifying each clause that imposes a compliance cost.

2. Categorize each identified compliance obligation

Categorize each clause that has been identified as imposing a compliance cost as either a direct financial cost, administrative cost or substantive compliance cost.

3. Identify Sources

Identify the number of regulated entities and/or outputs (number of goods or services) that will be subject to the identified compliance costs.

4. Quantify each identified compliance cost

Calculate the direct financial costs, administrative costs and substantive compliance costs for each identified clause.

5. Summarize the total compliance costs

Add the direct financial costs, administrative costs and substantive compliance costs to calculate the total compliance costs on a per regulated entity and for all regulated entities.

Each of the five key steps is explained in further detail below.

Step 1: Define the regulatory activities that impose a compliance cost

Legislation, regulation and other legal instruments impose a broad range of compliance obligations on people, businesses and organizations. The following is a list of common compliance obligations that are prescribed in legislation, regulation and other legal instruments:

- Authorities and Approval to supply goods or services to a third party
- Audits
- Annual returns
- Annual reports
- Prescribed Equipment
- Condition and repair of equipment
- Disclosure of information
- Financial assurances
- Licence application fees
- Licence renewal fees
- Permit application fees
- Permit fees
- Registration application fees
- Registration fees
- Retention of records
- Specifications and equipment
- Maintenance of equipment
- Inspection of equipment
- Protection of equipment
- Security of premises, equipment, processes and systems
- Method of payment
- Prescribed processes and systems
- Standards for the production of goods and services
- Material Safety Data Sheets
- Induction, information, training and supervision
- Hazard identification and analysis
- Risk assessment and control
- Investigation
- Packing, marking and labelling
- Notification of incidents
- Planning for emergencies
- Review processes and systems

This is not an exhaustive list of compliance obligations.

Step 2 Categorize each identified compliance obligation

Each identified compliance obligation needs to be categorized into either direct financial cost, administrative cost or substantive compliance cost. To illustrate this, the compliance obligations from Step 1 are categorized in Table 1 below.

Table 1: Compliance Obligations and Type of Compliance Cost

Regulatory Activity	Type of Compliance Cost
Authorities and Approval to supply goods or services to a third party	Substantive Compliance Cost
Audits	Substantive Compliance Cost
Annual returns	Administrative Cost
Annual reports	Administrative Cost
Prescribed Equipment	Substantive Compliance Cost
Condition and repair of equipment	Substantive Compliance Cost
Disclosure of information	Substantive Compliance Cost
Financial assurances	Substantive Compliance Cost
Licence application fees	Direct financial cost
Licence renewal fees	Direct financial cost
Permit application fees	Direct financial cost
Permit fees	Direct financial cost
Registration application fees	Direct financial cost
Registration fees	Direct financial cost
Retention of records	Administrative Cost
Specifications and equipment	Substantive Compliance Cost
Maintenance of equipment	Substantive Compliance Cost
Inspection of equipment	Substantive Compliance Cost
Protection of equipment	Substantive Compliance Cost
Security of premises, equipment, processes and systems	Substantive Compliance Cost
Method of payment	Administrative Cost
Prescribed processes and systems	Substantive Compliance Cost
Standards for the production of goods and services	Substantive Compliance Cost
Material Safety Data Sheets	Administrative
Induction, information, training and supervision	Substantive Compliance Cost
Hazard identification and analysis	Substantive Compliance Cost
Risk assessment and control	Substantive Compliance Cost
Investigation	Substantive Compliance Cost
Packing, marking and labelling	Substantive Compliance Cost
Notification of incidents	Administrative
Planning for emergencies	Substantive Compliance Cost
Review processes and systems	Substantive Compliance Cost

Step 3 Identify sources

Several pieces of information are required to calculate the cost of compliance. As a matter of good practice, government departments should validate government data from the National Statistical Office and other relevant departments by consulting with the appropriate industry federation or professional association.

You will need to know the number of regulated entities that will be affected by the proposed regulation. The government department may already have this data. If not, it may need to obtain this data from the National Statistical Office or the relevant industry federation or professional association.

In some cases, you will need to know the number of goods or services that are provided on an annual basis. This might be obtainable from the National Statistical Office, industry federation or professional association.

Where average weekly or monthly earnings for a regulated industry sector cannot be reliably sourced from an industry federation or professional association, the national average weekly or monthly earnings should be used from the National Statistical Office.

A desk-top estimate of the time taken for different administrative and substantive compliance costs can be undertaken but should be verified in consultation with a regulated industry sector, profession or occupation. For example, an industry federation or professional association may nominate a small sample of businesses that are willing to allow government department officials to visit and witness the time taken to complete the proposed administrative and substantive compliance measures.

Step 4 Quantify each identified compliance cost

Direct financial costs

The formula used for direct financial costs for individuals, business and organizations is:

Direct financial cost = Tariff x Quantity x Frequency

Where:

Tariff is the regulatory fee or administrative charge payable to government for a licence, permit, registration or any other approval.

Quantity is the number of regulated entities or the number of goods or services that incur a regulatory fee or administrative charge. A regulated entity includes an individual, business and organization.

Where a reasonably accurate number of regulated entities cannot be determined, the government department should still provide an estimated number and the basis for the estimated number (don't just pluck a number out of the sky).

Frequency is the number of times per year a regulatory fee or administrative charge is payable to the government. If the regulation requires payment of a quarterly fee, the frequency would be 4.

Box 2: Direct Financial Costs – Licence Fee Examples

A regulation prescribes a licence application fee of $900 and 100 licence applications have been submitted on average over the past several years.

Using the above formula, the direct financial costs = $900 licence application fee x 100 regulated entities =$90,000.

A regulation prescribes a licence renewal fee of $700 and 1,000 regulated entities will be required to renew their licence. Using the above formula, the direct financial costs = $700 annual licensing renewal fee x 1,000 regulated entities = $700,000.

Calculating Labour Costs for Administrative & Substantive Compliance Costs

The formula used for labour costs for business and community organizations is:

Labour cost = Price x Quantity

= (Time required x Labour Cost) x (Times Performed x Number of regulated entities x Number of staff)

Where:

Time required is the actual time taken per staff member, in hours (or minutes, where appropriate) for businesses or organizations to perform a regulatory activity.

Labour cost is the hourly wage rate plus any non-wage costs of employees. The hourly wage rate is the gross wage received by an employee. Non-wage costs of employees should include any on-costs associated with the wage, such as payroll tax, superannuation and workers compensation premiums, as well as any overhead costs associated with running the business such as rent, rates, building insurance, electricity, gas (other energy costs) information technology equipment, telephone, motor vehicles, machinery and equipment and other business consumables.

The formula for calculating the hourly wage rate:

Gross annual salary divided by the number of working days (excludes annual holidays, public holidays and sick leave entitlements) multiplied by the number of hours per working day.

For example annual salary is $60,000. The number of working days is 200 per annum and 8 hours per working day. This equals 1600 hours of work. So $60,000 is divided by 1600 hours = $37.50 hourly rate.

Where the hourly wage rate and non-wage costs of employees is unknown or is likely to be a costly exercise to collect such information, an economy-wide value should be used sourced from the National Statistical Office.

In Australia, the default multiplier is 16.5% for salary on-costs (multiplier 1.165 and 50% for overheads (multiplier 1.5).

Using the above example for the hourly wage rate of $37.50 x 1.165 x 1.5 = $65.53 hourly rate.

The $65.53 hourly rate is the wage and non-wage cost of an employee.

Time Performed is the number of times a regulatory activity is performed per year per staff member. For example, if a regulatory activity is required monthly, the value would be 12.

Number of businesses or community organizations is the number affected by a particular regulatory obligation.

Number of staff is the number of staff members per business or community organization who perform the regulatory activity.

Box 3 below shows how to calculate administrative costs using quarterly returns as an example.

Box 3: Administrative costs – Quarterly Returns Example

A regulation requires quarterly reports to be submitted to a government agency. Consultation with a sample of affected regulated entities reveals the following information. The average time taken to prepare a quarterly report is one hour. The average employee hourly rate is $50 (includes wage and non wage cost). The number of times the quarterly report is performed is 4 times per year. There are an estimated 2,000 regulated entities and it takes only one employee per regulated entity to prepare the quarterly report.

Using the labour cost formula, the administrative cost per annum per regulated entity is:

1 hour x $50 x 4

= $200

Using the labour cost formula, the administrative cost per annum for the industry is:

(1 hour x $50) x (4 x 2000 x 1)

= $50 x 8,000

= $400,000

Box 4 below shows how to calculate substantive compliance costs using professional services as an example.

Box 4: Substantive Compliance Cost - Professional Services Example

Using the example from Box 3 where a regulation requires quarterly reports to be submitted to a government agency, let's assume that the quarterly report also requires independent certification by an accountant (that is an accountant external to the regulated entity). Consultation with a small sample of accounting firms reveals the average cost for engaging an external accountant to certify the quarterly report is $100. The number of times the quarterly report is performed is 4 times per year. There are an estimated 2,000 regulated entities.

Hence, the substantive compliance cost per annum incurred by each regulated entity would be:

$100 x 4 = $400

The substantive compliance cost per annum incurred by the industry would be:

$100 x 4 x 2,000 = $800,000

Box 5 provides an example of a substantive compliance cost in relation to training. Given that training is a significant cost, this example demonstrates how the compliance cost affects small, medium and large businesses.

Box 5: Substantive Compliance Cost – Training Example

The regulations impose a number of compliance obligations that require persons to be qualified to undertake the prescribed compliance program. The regulations prescribe the curriculum and a requirement that regulated entities provide evidence personnel responsible for the compliance program have undertaken appropriate training. Consultation with a sample of affected regulated entities reveals that large firms will need to provide training to an average of four staff, medium sized firms two staff and small firms one person.

The government agency in consultation with the relevant industry federation has estimated 20 large firms, 60 medium firms and 140 small firms.

Consultation with a sample of regulated entities reveals that large firms will need to provide training to 4 personnel, for medium-sized firms about 2 personnel and for small firms one person. Accordingly, a total of 340 personnel across the industry will need to be trained (20 large firms x 4 personnel =80 personnel)(60 medium-sized firms x 2 personnel = 120 personnel)(140 small firms x 1 person=140 personnel).

Consultation reveals the compliance manager in large and medium-sized firms and a senior manager in a small firm will undertake the training. Preparation time for the development of an internal training program is estimated at about 16 hours at $100 per hour or $1,600 for large and medium-sized firms and $120 per hour or $1,920 for small firms.

Consultation also reveals that staff training will take an average of three hours. The compliance manager from large and medium-sized firms and the senior manager from small firms will present the training at a cost of $300 and $360 respectively. The average hourly rate of the 340 employees requiring training is $50 across all firms.

Using the labor cost formula, the substantive compliance cost for each large firms is:

$1600 + $300 + $600 = $2,500.

The substantive compliance cost for the 20 large firms is:

(20 large firms x 1 compliance manager =20) x ($100 x 16 hours = $1,600) + (20 large firms x 1 compliance manager = 20) x ($100 per hour x 3 hours = $300) + (20 large firms x 4 personnel = 80) x ($50 per hour x 3 hours = $150)

=(20 x $1,600) + (20 x $300) + (80 x $150)
= $$32,000 + 6,000 + $12,000
= $50,000.

The substantive compliance cost for each medium-sized firms is:

$1,600 + $300 + $300 = $2,200.

The substantive compliance cost for the 60 medium-sized firms is:

(60 medium-sized firms x 1 compliance manager = 60) x ($100 per hour x 16 hours = $1,600) + (60 medium-sized firms x 1 compliance manager = 60) x ($100 per hour x 3 hours = $300) + (60 medium-sized firms x 2 personnel = 120) x ($50 per hour x 3 hours = $150)

= (60 x $1,600) + (60 x $300) + (120 x $150)
= $96,000 + $18,000 + $18,000
= $132,000

The substantive compliance cost for each small firm is:

$1,920 + $360 + $150 = $2,430.

The substantive compliance cost for the 140 small firms is:

(140 medium-sized firms x 1 senior manager = 140) x ($120 per hour x 16 hours = $1,920) + (140 medium-sized firms x 1 compliance manager = 140) x ($120 per hour x 3 hours = $360) + (140 medium-sized firms x 1 person = 140) x ($50 per hour x 3 hours = $150)

= (140 x $1,920) + (140 x $360) + (140 x $150)
= $268,800 + $50,400 + $21,000
= $340,200

Summary of total costs:
20 large firms = $50,000
60 medium-sized firms = $132,000
140 small firms = $340,200
Total cost to industry = $522,200

Box 6 below provides an example of how to calculate the depreciation of equipment that needs to be purchased to comply with the regulations. Note, if regulated entities are likely to use this equipment in the absence of regulation (i.e it is a business-as-usual cost), the equipment compliance cost should not be included. It is still worthwhile calculating the compliance cost and providing an explanatory note if it is being excluded on the basis it is a business-as-usual cost.

Box 6: Substantive Compliance Cost – Equipment Example

The regulation prescribes the type of equipment that must be used. In this example, it is assumed the cost of the equipment is $2,000 and has a life of ten years. Consultation with the industry reveals 1,000 regulated entities will be required to obtain the equipment. Each regulated entity would be required to fund/finance the initial cost of $2,000 to purchase the equipment with a total cost to the industry of $2 million.

The equipment cost is depreciated using a straight-lime method over the ten years to calculate the annual depreciation charge. In this case, the annual depreciation charge is $200.

Accordingly, the annual depreciation charge per regulated entity is $200.

The annual depreciation charge to the industry is $200,000.

Box 7 below provides an example of a substantive compliance cost that requires data on the number of goods sold.

Box 7: Substantive Compliance Cost – Disclosure Example

The regulation prescribes a disclosure statement must be accompanied with each unit of good that is presented for sale. Consultation with the industry reveals that 1,000 regulated entities will be required to comply with the disclosure statement requirements.

Consultation with the industry reveals the average time to prepare a disclosure statement is 15 minutes (0.25 hour) and the average personnel cost is $50 per hour (wages and non-wages). Hence, the cost per disclosure statement is 0.25 x $50 = $12.50.

The industry estimates about 1,500,000 units of goods are sold per annum.

Accordingly, the total cost to industry of the disclosure statement is $12.50 x 1,500,000 units = $18,750,000.

Step 5: Summarize Total Compliance Costs

The direct financial costs, administrative costs and substantive compliance costs should be identified and calculated as shown in Table 2 below. This provides a summary for the Minister or regulatory body to understand the extent of the compliance costs for various compliance obligations imposed on regulated entities.

Key steps 1 & 2 are effectively completed in the first column (Type of Regulatory Cost); the data requirements of Step 3 are completed in the second column (Number of Regulated Entities) and the third column where applicable (Units of Goods/Service); Step 4 is completed in Columns 5, 6, 7, 8 & 9.

Table 2: Total Compliance Costs

Type of Regulatory Cost	Number of Regulated Entities	Regulatory Fee	Units of Goods/ Service	Time - hour	Labor Cost	Frequency	Cost per regulated entity	Total Cost
Direct Financial Cost								
Licence Application	100	$900				1	$900	$90,000
Licence Renewal	1,000	$700				1	$700	$700,000
Sub-total								**$790,000**
Administrative Cost								
Quarterly Returns	2,000			1	$50	4	$200	$400,000
Sub-total								**$400,000**
Substantive Compliance Costs								
Independent certification	2,000			1	$100	4	$400	$800,000
Equipment	1,000						$2000	$2,000,000
Disclosure	1,000		1,500,000	0.25	$12.50			$18,750,000
Training								$522,200
Sub-total								**$22,072,200**
Total								**$23,262,200**

Table 2 shows that the total compliance costs is $23,262,000 and is based on the compliance cost measurement undertaken from the examples in Step 4 (boxes 2 to 7.

However, the above summary in Table 2 is likely to include one-off costs (licence application), annual on-going costs (licence renewal, quarterly returns, independent certification and disclosure) and periodic costs (training and equipment).

It is useful to identify the annual compliance costs per regulated entity and for the industry, and where applicable, the compliance costs per unit for goods and services and the compliance cost as a percentage of the cost of providing a unit of a good or service.

Table 3 below shows the annual compliance costs per regulated entity.

Table 3: Annual Compliance Costs per Regulated Entity

Type of Regulatory Cost	Annual Compliance Costs
Licence Renewal	$700
Quarterly Returns	$200
Independent Certification	$400
Equipment (depreciation)	$200
Total	$1,500

The cost of disclosure statements is the major compliance cost for the industry but represents a relatively small cost per unit of a good sold. To ascertain the cost on per regulated entity basis would require access to sale figures to determine the likely cost for the average sales turnover for small businesses, medium sized and large businesses.

It would be useful to estimate the cost of disclosure statements as a proportion of the retail price of a good/service.

In addition, regulated entities will incur periodic training of personnel from $2,200 to $2,500. The frequency of periodic training will be dependent on staff turnover at each regulated entity.

As can be seen from the above discussion, it is difficult to quantify precisely the exact compliance cost on an annualized basis. What is important is to use the compliance cost measurement results to target compliance obligations that appear to impose an unreasonably high cost and find low cost solutions that still meet the policy objective.

4: Compliance Design Efficiency Assessment

The objective of regulatory reform is to ensure the regulatory compliance obligations are the minimum necessary to achieve the policy objective and to solve the problem. Any compliance obligation that exceeds the minimum necessary will impose an unnecessary cost on regulated entities.

The completion of the compliance cost measurement exercise will identify some compliance obligations that impose greater compliance costs than other compliance obligations. This may help a government agency to target its efforts in terms of investigating the scope for more efficient options that can deliver a reduced compliance cost.

This section provides several techniques for ensuring compliance obligations are efficient and the minimum necessary to achieve the policy objective.

The techniques involve questioning the purpose and benefits of each compliance obligation and also undertaking international benchmarking to identify better compliance approaches that impose lower costs on regulated entities.

Benchmarking other jurisdictions is useful for identifying different compliance approaches. This requires minimal research effort given that most governments now keep an on-line central library of legislation. In some cases, it may be necessary to access published regulatory impact analysis and/or liaison with responsible officers in these jurisdictions to understand the reasons for the different approach.

The following questions need to be asked by the government agency responsible for the administration of the regulation for each of the compliance cost categories to ensure that the regulations do not impose unnecessary compliance costs on regulated entities.

Direct financial costs

The key question in respect to regulatory fees and administrative charges is whether the fees and charges are based on cost recovery. Fees and charges should be based on the 'user pays' principle (unless there are justifiable equity reasons to not fully recover costs).

Have the proposed fees and charges been assessed using the Government's Cost Recovery Guidelines?

Do the proposed fees and charges fully recover the Government's costs?

Are the costs efficient or is there scope to streamline or improve the processing of licences to reduce costs and ultimately the level of fees and charges?

Does the application for a licence capture identical or similar information required in other licences that the prospective licence-holder is likely to already hold?

Administrative Costs

Administrative costs often involve a regulated entity keeping records to demonstrate that it has actually undertaken a particular compliance obligation and/or providing/notifying a government agency of a compliance obligation.

Some key questions that need to be explored include:

Do the regulations require regulated entities to keep paper records where electronic records exist?

Legislation often requires regulated entities to maintain paper based record keeping. However, most businesses maintain electronic records (for efficiency reasons and to reduce storage costs associated with paper-based records). Accordingly, legislation tends to permit regulated entities to maintain paper and/or electronic records.

Is the prescribed period for the retention of records appropriate and is it linked to the policy objective and the way in which the market operates?

It is common for legislation to prescribe different periods for the retention of records: for example, two years, five years, six years, seven years and ten years. In many cases, the period for the retention of records has been determined in an arbitrary manner without any consideration to other legislative standards and the purpose for keeping records for a particular timeframe. As a result, an inconsistent approach has developed across legislation, and in some cases, the record retention requirement exceeds the associated risk and the way in which the market operates.

In Australia, it is a requirement for businesses to retain financial records for seven years to enable the Australian Securities and Investment Commission to undertake audits. The corporations regulatory framework provides a benchmark for other regulatory frameworks.

The Motor Car Traders Regulations (Victorian Government, Australia) previously required motor car traders to retain records of contracts and warranties for seven years. This prescribed period was based on the seven year requirement in the corporations law without any consideration as to the way in which the market operated. A review found that seven years was unwarranted and the regulation was amended to six years on the basis that most financing/leasing and warranty periods fell within the six year timeframe.

Is the compliance obligation a duplication of an existing compliance obligation?

Where a regulation requires regulated entities to keep records and to provide information (e.g returns) about those records, a key question is whether unnecessary duplication is likely to occur. If the regulation requires records to be kept, the preparation of a return that provides a summary of the records is in effect duplication. An alternative approach would be to require regulated entities to keep records and make those records available for inspection by authorized officers of the responsible government agency.

Using the Quarterly Returns example from Box 3, let's assume that the regulation also requires the retention of records for five years. Further questions that need to be asked include: does the government agency process, review or analyze the quarterly reports for non-compliance? How many government agency officers are involved in processing, reviewing and analyzing the quarterly reports? What is the rate of non-compliance detected? Is the type of non-compliance likely to inflict harms (e.g consumer detriment) on third parties? Are there any specific characteristics of the regulated entities that tend to exhibit non-compliance? If the non-compliance rate is low across the industry, is this due to the regulatory requirement to lodge quarterly reports or due to other regulatory and/or market practices?

The regulation already requires retention of individual transaction records for five years. These records are used to compile the quarterly report. If an assessment found low rates of non-compliance across the industry, an alternative approach could be to undertake random audits based on the risk profile of regulated entities and/or respond to consumer complaints.

Substantive Compliance Costs

Substantive compliance costs involve regulated entities purchasing to meet compliance obligations (e.g professional services, equipment, training, etc).

Some key questions that need to be explored include:

Is it necessary for the regulated entity to purchase professional services?

It is relatively common for legislation to require a regulated entity to have documents independently certified by an auditor or a lawyer. This obviously increases the compliance cost. The quarterly returns (Box 3) revealed that the preparation of a quarterly returns cost a regulated entity $200 per annum and the independent certification of the quarterly return by an accountant added a further $400 cost to the regulated entity per annum (Box 4).

The compliance cost measurement provides useful information in identifying that the independent certification represents two-thirds of the compliance cost associated with submitting annual returns.

If the analysis by the government agency to the above-mentioned questions to the quarterly returns in the administrative costs section revealed a preference to moving to a risk-based random audit approach rather than the requirement to submit quarterly returns, it would seem inevitable that the compliance obligation to have independent certification should be removed.

In other cases, a corporation must keep financial accounts and submit an independently certified annual return with financial information (balance sheet and profit and loss statement).

The purpose of the annual return is to enable other persons, companies and organizations to obtain a copy of a particular registered company's annual return to ascertain its financial health and whether there is a risk in trading with that company. For public companies, the lodgment of an annual return with financial information provides a transparent account of the company's balance sheet and profit and loss to enable current and potential investors to make informed investment decisions. Independent certification of the financial position of a corporation provides some reassurance to potential investors that the accounts are a true and fair representation of the corporation's assets and liabilities.

However, for private companies it is not clear whether independent certification of its annual return (assets and liabilities) is particularly useful to other businesses that want to determine their credit risk in trading with them. An annual return provides historical financial data but not the current financial position of the company. Financial institutions also draw upon annual returns to determine credit risk for the purposes of lending to a private company.

In the absence of an annual return, financial institutions would request a company seeking a loan to provide copies of the past three years of financial accounts, and in most cases, request that an accountant has certified the financial accounts. In addition, it would also seek recent bank statements to determine the current financial position of the company. Where the private company does not have sufficient assets, the financial institution would seek personal collateral (director's family home and/or other assets).

In respect to other businesses wanting to trade with the company, they could obtain credit rating searches on the company to determine credit risk, request a bank guarantee as a contractual condition or liaise with other business suppliers to the company to ascertain their payment history.

For most of these reasons, Australia removed the requirement for private companies to disclose financial information in the annual return. This effectively reduced an unnecessary compliance cost but still enabled financial institutions or other businesses to seek detailed financial information, and where appropriate, to request independent certification by an accountant.

Can the compliance obligation be delivered in a more efficient way?

The compliance cost measurement can be useful in dissecting the key cost components of a particular compliance obligation. For example, the training example in Box 5 showed that the substantive compliance cost included the preparation of an internal training program, the presentation of the training program and the cost of staff attending the training.

As can be seen from Box 5, the compliance cost measurement revealed that the preparation of an internal training program by each of the 220 regulated entities would cost $396,800 or 76 percent of the $522,200 total compliance cost.

The presentation of the training program to personnel resulted in a further $74,400 or 14 percent of total compliance costs.

The opportunity cost of 340 personnel attending training resulted in $51,000 or 10 percent of total compliance costs.

The compliance cost measurement enables a government agency to target significant cost components and to find alternative cost effective solutions. In this case, a possible solution would involve the government agency preparing the training material and notes. That is, the preparation of training material would be undertaken once rather than by each individual regulated entity. In addition, the government agency could collaborate with the relevant industry federation to provide training to a larger number of personnel from several regulated entities rather than at each regulated entity's premises.

While this would shift the cost back onto government it would ensure a consistent training program and provide 220 regulated entities with significant compliance cost savings. A lower number of training sessions would also produce further compliance cost savings in respect to the presentation of the training program.

Are the compliance obligations prescriptive and duplicate a licensing condition?

Regulations that prescribe the type of equipment are likely to prevent business from developing innovative methods and/or adopting market improvements such as new technologies. It is normally unnecessary for a regulation to be prescriptive if another regulation requires as a licence condition a particular outcome that is related to the prescriptive equipment requirement.

For example, accident towing regulation requires as a licence condition that a licensed tow truck operator/driver must clean debris at the accident scene before leaving to tow a smash motor vehicle. This makes redundant and unnecessary the compliance obligation for a tow truck to carry a shovel and a broom. The licence condition to clean debris at the accident scene should be relied upon from an enforcement perspective rather than the prescriptive equipment compliance obligation as this prevent tow truck operators from

adopting solely mechanical cleaning solutions that are more likely to be quicker in cleaning up an accident scene.

Do the compliance obligations duplicate the operation of the market?

A common legislative requirement is for regulated entities to provide disclosure statements to consumers to address informational asymmetry. However, government agencies need to assess whether the market has changed in the way in which information is disseminated to consumers. The internet has changed markets considerably, particularly consumer access to information that was previously only obtainable from a disclosure statement.

For example, motor car traders are required to place a disclosure statement physically on the window of a second-hand motor vehicle at a motor car trader's dealership. This was the traditional method for prospective purchasers to browse the details about the motor vehicle (odometer reading, vehicle identification, warranty status etc). The internet has led to major car sales websites that provide photographs and similar information (and in some cases, more valuable information) to the prospective purchaser. In these situations, consideration needs to be given to whether the regulatory disclosure statement is duplicating the way the market has changed, and whether electronic disclosure on the internet is a more cost effective solution than a paper-based disclosure system.

Benchmarking

Part of the regulatory reform approach is to benchmark different approaches to compliance obligations to identify potential lower cost compliance that still delivers the policy objective.

Table 4 below shows a list of hypothetical benchmarks with Australia, Malaysia and the U.S.A on a range of different compliance obligations. Table 4 is provided to illustrate the benefits of benchmarking. In respect to the licence renewal fee, Thailand has a higher fee compared with the other countries. Further investigation for the difference revealed the other countries have on-line licensing systems whereas Thailand manually processes licence renewals. Hence, there is potential scope for Thailand to adopt an on-line licensing system subject to a business case that demonstrates such a system would provide greater cost savings to government and business.

Benchmarking record-keeping requirements reveals the other countries have similar retention periods compared with Thailand. Further investigation reveals similar regulatory frameworks and the lower retention periods have not caused any problems for the regulators in these countries. Accordingly, it is recommended that Thailand adopt a five year period rather than the current nine year period.

With disclosure statements, Thailand and the other countries have similar content and there would appear to be no superior approach to disclosure statements.

In respect to the requirement for the lodgment of annual return, the other countries do not prescribe this compliance obligation. Further investigation revealed that regulators in these other countries rely on other regulatory and market processes to achieve the same outcome as the annual return. Thailand has these other processes and it is recommended that the annual return is abolished.

As the other countries do not have an annual return, the independent certification requirement does not exist. For the above reasons, it is also recommended the independent certification is abolished.

Table 4: International Benchmarking

Type of Regulatory Cost	Thailand	Australia	Malaysia	USA	Response
Licence Renewal Fee	$600	$400	$450	$300	Australia & USA have on-line licence renewal systems, Malaysia has a partial on-line system. Thailand manually processes licence renewals.
Record-keeping	9 years	5 years	6 years	5 years	Recommend 5 years
Disclosure Statement	Yes	Yes	Yes	Yes	The content of the disclosure statements are similar in each country.
Annual return	Yes	No	No	No	Recommend removal of annual return. Regulated entities will be still required to keep transactional records
Independent certification of annual return	Yes	n/a	n/a	n/a	Recommend removal of independent certification

5. Reporting Requirements

Certificate of Compliance

The signed compliance cost measurement report together with the Certificate of Compliance must be published on the responsible Ministry website and the Office of Regulation Reform website. The Certificate of Compliance pro-forma is provided in Section 6 Templates.

Role of the Office of Regulation Reform

The role of the Office of Regulation Reform (ORR) is to educate and provide advice on the compliance cost measurement framework.

The ORR may advise the Office of the Prime Minister if it believes the Compliance Cost Measurement report has not been undertaken in accordance with the Government's Compliance Cost Measurement Guidelines.

The ORR will establish a compliance cost measurement database. The ORR will record in the database the results from each compliance cost measurement report prepared by government agencies. In particular, for each type of compliance obligation, the ORR will build a knowledge database of the different regulatory approaches and use this information to target inconsistent approaches across government. For example for the retention of records, the database may show that Regulation A requires records to be kept 5 years, Regulation B for 8 years, Regulation C for 2 years, Regulation D for 4 years, Regulation E for 5 years, Regulation F for 5 years, Regulation G for 10 years.

With this information, the ORR could analyze each of the regulations and the risks associated and make a policy recommending the maximum period for the retention of records by persons, business and organizations. This policy would provide guidance to government agencies introducing or amending a legislative instrument of the government's position on the maximum period for the retention of records and the matters that need to be considered in determining the appropriate period. In doing so, this will help to prevent unnecessary compliance cost burdens on persons, business and organizations.

This comparative analysis and policy-making approach will be undertaken for each of the compliance obligations that are common to most regulatory schemes.

6: Templates

This section provides a template for compliance cost measurement and compliance design efficiency assessment and also a pro-forma for the certificate of compliance that needs to be signed by the responsible departmental head and responsible Minister.

Compliance Cost Measurement Template

Name of Ministry/ Regulatory Body.....

Title of Legislation/Regulation.....

Total Compliance Cost Summary

Type of Regulatory Cost	Number of Regulated Entities	Regulatory Fee	Units of Goods/ Services	Time	Labor Cost	Frequency	Cost per regulated entity	Total Cost
Direct Financial Cost								
Sub-total								
Administrative Cost								
Sub-total								
Substantive Compliance Costs								
Subtotal								
Total								

Annual Compliance Costs per Regulated Entity

Type of Regulatory Cost	Annual Compliance Costs
Total	

Where applicable, one-off costs
Where applicable, periodic costs
Where applicable, compliance cost per unit (goods or services)
Where applicable, compliance cost as a percentage of market price per unit (goods or services)

Compliance Design Efficiency Assessment Template

Type of Regulatory Activity	Question	Yes/No	Explanation
Direct Financial Cost			
	Have the proposed fees and charges been assessed using the Government's Cost Recovery Guidelines?		
	Do the proposed fees and charges fully recover the Government's costs?		
	Are the costs efficient or is there scope to streamline or improve the processing of licences to reduce costs and ultimately the level of fees and charges?		
	Does the application for a licence capture identical or similar information required in other licences that the prospective licence-holder is likely to already hold?		
Administrative Costs			
	Do the regulations require regulated entities to keep paper records where electronic records exist?		
	Is the prescribed period for the retention of records appropriate and is it linked to the policy objective and the way in which the market operates?		
	Is the compliance obligation a duplication of an existing compliance obligation?		
	What is the purpose and benefits of the compliance		

	obligation?		
	What would happen in the absence of the compliance obligation?		
Substantive Compliance Costs			
	What is the purpose and benefits of the compliance obligation?		
	Is it necessary for the regulated entity to purchase professional services?		
	Can the compliance obligation be delivered in a more efficient way?		
	Are the compliance obligations prescriptive and duplicate a licensing condition?		
	Do the compliance obligations duplicate the operation of the market?		
	What would happen in the absence of the compliance obligation?		

International Benchmarking

Type of Regulatory Cost	Thailand	Name of Country	Name of Country	Name of country	Response

Certificate of Compliance

The responsible agency has assessed any fees and charges in accordance with the Government's Cost Recovery Guidelines.

The responsible government agency has undertaken an assessment of each compliance obligation (tested the purpose and appraised the likely outcome in the absence of the compliance obligation) in consultation with affected stakeholders.

Name the key affected stakeholder organizations:

1.....

2.....

3.....

Add more lines if necessary.

The identified compliance costs have been benchmarked against other jurisdictions.

Name the jurisdictions and the title of the legislation/regulation

1. .....

2. .....

3.....

Departmental Head

I am satisfied that the compliance cost measurement has been undertaken in accordance with the Government's Compliance Cost Measurement Framework.

Signature.....

Date.....

Minister

I am satisfied that the compliance obligations are the minimum necessary to meet the policy objective.

Where appropriate, (However, I have requested the department to undertake further research as to whether a more effective approach with lower compliance costs can be implemented for the following compliance obligations. A report must be submitted to myself by .....)

Signature.....

Date.....

Regulatory Impact Analysis Training

Summary of Results

Overview

Martin Oakley, Director, Niskin Enterprises Pty Ltd presented the two-day regulatory impact analysis training to about 30 government officers from the Ministry of Justice, National Economic and Social Development Board and several other departments. The two-day course was presented twice; on 1 & 2 March and on the 3 & 4 March.

The two-day course provided an introduction to regulatory impact analysis with a particular emphasis on the nature and extent of the problem. The analysis of the nature and extent of the problem provides the foundation for the RIA. In-depth analysis enables clear definition of the problem, the causes of the problem, the groups and or sub-groups causing the problem, provides the required data for the assessment of the benefits and helps to identify potential regulatory and non-regulatory options to address the problem.

The objectives of the course is to clearly demonstrate the advantages of undertaking in-depth problem analysis that is evidence-based (supported with empirical evidence) and how this approach leads to the identification of better regulatory and non-regulatory outcomes that meet the policy objective but in a more efficient way.

Another key objective is to clearly demonstrate the identification of costs and benefits, particularly unintended consequences of an option and how this can lead to further economic and social problems.

At the end of the two-day course, participants should have grasped the conceptual thinking that is required to undertake an in-depth problem analysis and impact analysis. With this knowledge, participants can read RIA Guidelines and Cost Benefit Analysis Guidelines and apply the valuation and measurement of costs and benefits in a consistent and appropriate manner during the preparation of a RIA.

Outline of the Course

- The Role of Government
- Different Roles of Government: Economic, Social and Administrative Regulation
- The Role of Government and the Relevance of RIA
- RIA Structure
- Nature and Extent of the Problem
- Policy Objective
- Identification of Options
- Cost Benefit Analysis

- Other Methodologies
- Public Consultation
- Corruption Impact Assessment
- Recommended Reading List

Case studies were used widely throughout the course to help participants to understand the key concepts.

Key Observations

Most of the government officers that attended the training course over the four days were predominately lawyers, with a few economists and policy analysts. It is fair to state that most of the lawyers struggled with the concepts and analytical thinking required for undertaking a RIA.

Whereas, the economists and policy analysts quickly grasped the key concepts and demonstrated strong application of those concepts in group discussions on the nature and extent of the problem and the cost benefit analysis in respect to policy topics selected by the group: physical limitations on liquor bars near educational institutions (1& 2 March) and abortion (3 & 4 March).

The group discussions clearly demonstrated to each of the participants the benefits of establishing multi-disciplinary teams with input from different departments in analyzing market or regulatory failures, and in identifying/quantifying costs and benefits of alternative approaches.

In terms of rolling-out RIA training across the whole of government, it is important that RIA training is provided to an equal representation of economists, policy analysts, lawyers as well as other professions (e.g scientists, pharmacists etc) to ensure prepared RIAs represent a balanced assessment.

The multi-disciplinary team approach to the preparation of RIAs will also provide the necessary checks and balances to facilitating high quality RIA and identifying potential regulatory reforms.

PUBLIC CONSULTATION GUIDELINES

Purpose

Public consultation is integral to policy development and efficient regulatory design. Government has limited and incomplete knowledge of economic, social and environmental problems and needs the input of a wide range of stakeholders to ensure a compelling case has been made for government intervention into the market, and to ensure that the proposed regulation provides a net benefit to society.

The public consultation guidelines are designed to assist government officials identify, plan and execute public consultation with affected stakeholders.

The Guidelines comprise the following chapters:

1. Introduction
2. Stakeholder Analysis and Mapping
3. Methods of public consultation
4. Public Consultation Approaches during the Policy Cycle
5. Case Study
6. Consultation Plan
7. Stakeholder Engagement
8. Evaluation
9. Checklist for Effective and Efficient Public Consultation

Chapters 1 to 4 provide background information on designing a public consultation process. Chapter 5 provides a case study on the principles and processes outlined in chapters 1 to 4.

Chapters 6 to 8 provide information on executing public consultation. Chapter 9 provides a checklist that covers the key points raised in all of the chapters.

1. Introduction

What is public consultation?

Public consultation involves seeking the input of a wide range of stakeholders who can make a valuable contribution to Government in fully understanding economic, social and environmental problems, to assessing the costs and benefits of proposed regulation and alternatives, regulatory implementation and post-implementation evaluation.

Public consultation can involve stakeholders:

- Providing expert advice on policy problems;
- Contributing to providing advice on possible regulatory and non-regulatory solutions to a policy problem;
- Critiquing Government policy analysis of a problem
- Scrutinizing draft regulation
- Providing feedback on the effectiveness of regulation
- Providing feedback on compliance costs

Public consultation should not just seek the views of stakeholders of a proposed regulation with the publication of a regulatory impact analysis. Government should already know or anticipate the views of affected stakeholders in terms of whether they support or oppose the introduction of a proposed regulation. Hence, this passive form of public consultation is unlikely to make a valuable contribution to policy development and/or bring together opposing views.

Most stakeholders have a position (support/oppose) on any given policy issue that is based on their principles and their limited knowledge. A comprehensive regulatory impact analysis should provide a compelling case that enables some stakeholders to reconsider their previously held views and positions. With new information, a key stakeholder is likely to change its initial position (support/ opposition) to a proposed regulation.

Accordingly, public consultation should encourage stakeholder ownership and buy-in to the policy development process by seeking assistance with data and information collection, analyses and the identification of other persons, businesses, institutes and other organizations that may have valuable data or information.

Where active stakeholder engagement is not undertaken, the quality of the regulatory impact analysis is likely to be poor and result in key affected stakeholders maintaining their views and positions.

Why is public consultation important?

Government is not normally involved in the production and consumption of goods and services in the market (other than state-owned enterprises that provide essential services). Accordingly, government has limited or incomplete

information about the nature and extent of a specific economic, social or environmental problem to determine whether there is a justification and a role for government intervention into the market by way of regulation. Similarly, once government has decided it has a role, it has limited and incomplete information on the costs and benefits of the proposed regulation and alternative approaches. This is a classic case of a market characterized by imperfect information and if not addressed can lead to regulatory failure.

This can be alleviated if producers, consumers, institutions, relevant subject experts and the wider community share their knowledge and information with government to help it to determine whether there is a role for government, and if so, the most effective and efficient option that will deliver a net benefit to the community.

In most cases, each stakeholder has limited information about the problem and the costs and benefits of the various solutions. Government has a role in bringing together the information, data and ideas from all stakeholders to present a balanced assessment of the problem and the costs and benefits of the various alternatives to ensure the best possible outcome is achieved at the minimum cost to society.

Regulation can benefit some groups at the expense of other groups, particularly where it specifically restricts competition. Regulations that impose obligations, costs, burdens, limit choice and freedom need to be justified. It is important that the regulation-making process is transparent and government is accountable for its decision-making. Accountability involves government demonstrating that the benefits of regulation will outweigh the costs arising from the obligations and restrictions imposed on affected individuals and groups, that it has not unduly conferred preferential treatment on specific individuals or groups.

Who are the stakeholders?

Stakeholders are persons who are directly and indirectly affected by a regulation. Stakeholders can include:

- Business entities;
- Business, professional, employee and community associations;
- Consumers;
- Government;
- Academic and research institutions; and
- General public

Who to consult?

Prior to undertaking consultation, it is important to identify the stakeholders that are likely to contribute useful information and data in respect to the specific problem and the policy development stage.

There are three main types of regulation:

- Economy-wide;
- Industry specific; and,
- Generic

Economy wide regulation

Economy-wide regulation impacts on most business entities such as corporations regulation, competition regulation, occupational health and safety regulation and environmental protection regulation.

For example, key stakeholders in relation to Corporations regulation would include major industry federations, legal and accounting professional associations, Ministry of Commerce, academic and international experts

Key stakeholders in relation to occupational health and safety would include industry federations, medical profession associations, hospitals, academic and international experts

Industry specific or profession/occupation regulation

Industry specific regulation impacts a sole industry in most cases. For example, the taxi industry, the electricity industry, the pharmacy industry, timber industry, liquor industry. Profession regulation impacts specific professions such as doctors, dentists, accountants etc and occupational regulation such as builders, electricians and security guards.

Key stakeholders in relation to industry specific and profession/occupation regulation comprise the business entities and employees in a specific industry sector and their customers (suppliers, wholesalers, distributors, customers and third parties that represent these groups such as lawyers and accountants).

It is usually easier to identify the key affected stakeholders particularly for the regulated industry, profession and occupation. It is not always easy to identify customer stakeholders, particularly consumers, unless a consumer organization is actively involved in the specific policy and regulatory area.

Generic regulation

Generic regulation applies to most citizens. For example, road safety regulation. These regulations affect the behavior of individuals within the general public.

Key stakeholders for road safety regulation would likely to be the motoring and motorcycle organizations, the Thailand Accident Research Center, a public transport users group, local communities, hospitals, universities that specialize in road safety research

When to consult?

Consultation should occur early before government has made a decision. This allows government and affected stakeholders to keep an open mind about the need for government regulation and other possible solutions to the problem.

Consultation should occur across the policy cycle for new, amending and periodic review of regulations at the:

- Policy Development stage;
- Regulatory Impact Assessment stage; and
- Post Implementation Evaluation stage

Guiding Principles for Public Consultation

The OECD has produced guiding principles for public consultation as shown in Box 1 below.

Box 1: OECD Guiding Principles for Public Consultation

1. Commitment: Leadership and strong commitment to information, consultation and active participation on policy-making is needed at all levels, from politicians, senior managers and public officials.

2. Rights: Citizen's rights to access information, provide feedback, be consulted and actively participate in policy-making must be firmly grounded in law or policy. Government obligations to respond to citizens when exercising their rights must also be clearly stated. Independent authorities for oversight, or their equivalent, are essential to enforcing these rights.

3. Clarity: Objectives for, and limits to, information, consultation and active participation during policy-making should be well defined from the outset. The respective roles and responsibilities of citizens (in providing input) and government (in making decisions for which they are accountable) must be clear to all.

4. Time: Public consultation and active participation should be undertaken as early in the policy process as possible. This allows a greater range of policy solutions to emerge. It also raises the chances of successful implementation. Adequate time must be available for consultation and participation to be effective. Information is needed at all stages of the policy cycle.

5. Inclusions (Objectivity): All citizens should have equal opportunities and multiple channels to access information, be consulted and participate. Every reasonable effort should be made to engage with as wide a variety of people as possible.

6. Resources: Adequate financial, human and technical resources are needed if public information, consultation and active participation in policy-making are to be effective. Government officials must have access to appropriate skills, guidance and training. An organizational culture that supports their efforts is highly important.

7. Co-ordination: Initiatives to inform citizens, request feedback from and consult them should be co-ordinated across government. This enhances knowledge management, ensures policy coherence and avoids duplication. It also reduces the risk of 'consultation fatigue' – negative reactions because too much overlapping or poorly done consultation – among citizens and civil society organizations. Co-ordination efforts should not reduce the capacity of government units to ensure innovation and flexibility.

8. Accountability: Governments have an obligation to account for the use they make of citizen's inputs received – be it through feedback, public consultation or active participation. To increase this accountability, governments need to ensure an open and transparent policy-making process amenable to external scrutiny and review.

9. Evaluation: Evaluation is essential in order to adapt to new requirements and changing conditions for policy-making. Governments need tools, information and capacity to evaluate their performance in strengthening their relationships with citizens.

10. Active citizenship: Governments benefit from active citizens and a dynamic civil society. They can take concrete actions to facilitate citizen's access to information and participation, raise awareness, and strengthen civic education and skills. They can support capacity building among civil society organizations.

Source: OECD Handbook on Information, Consultation and Public Participation in Policy-Making.

2. Stakeholder Analysis and Mapping

The public consultation strategy needs to be designed with due consideration to the extent of the impact of a regulation and the type of regulation and the size of the impact.

Regulation that has a general impact on the community such as consumer protection is likely to need consultation with a wide group of business associations, consumer organizations, legal associations, government ministries and the general public. A significant amendment would require considerable interactive consultation with these groups whereas a minor administrative amendment with minimal impact may only require notification and invitation to comment.

Industry specific regulation by definition has a narrower range of affected stakeholders but depending on the design of the regulation may impact a wide range of stakeholders. For example, a significant amendment to taxi regulation that would affect competitiveness, price, customer service and so forth is likely to generate interest from not only the taxi industry but also from taxi users. In this case, business associations and consumer organizations, government ministries and the general public will want to be consulted.

By contrast, an amendment to taxi regulation that requires taxis to keep specific type of business records is unlikely to generate much interest other than from the taxi industry.

Stakeholder Analysis

It is useful to undertake the following analysis of the regulation that is to be subject to a regulatory impact analysis (RIA).

What is the nature of the proposed regulations?

Identify clauses that impose obligations on specific persons or groups (including government and state owned enterprises)

Rank the impact of regulatory obligations as high, medium and low.

Identify clauses that are administrative, machinery and declaratory in nature (in some cases, stakeholders may be interested in administrative matters, for example, the establishment of a new tribunal and the associated powers and functions.

Do the proposed regulations primarily impact on the directly affected group? (e.g compliance obligations such as frequency of audit, record-keeping etc)

Do the proposed regulations impact other stakeholders?

(e.g restrictions on competition such as barriers to entry by other players (including private sector participation that is predominately controlled by a state owned enterprise)

Do the proposed regulations impact end users?
(e.g licensing, price control and compliance obligations imposed on the affected group is likely to increase the cost or quality of service provided to consumers

Do the proposed regulations impact the wider community?
(e.g environmental standards such as the regulatory requirements to obtain a permit to discharge waste or road traffic controls to prevent traffic fatalities and injuries)

This analysis will help to identify the key affected stakeholders to consult with at the commencement of the regulatory review. It is not uncommon for the list of stakeholders to grow throughout the course of the regulatory review. Early consultation with key stakeholders will invariably result in these stakeholders identifying other stakeholders that should be consulted.

The following impact/stakeholder analysis is undertaken for the Motor Car Traders Regulations 2008 (State of Victoria, Australia) to demonstrate how to undertake stakeholder analysis and mapping. Each box on a specific regulation provides opening commentary and the reasons the regulation (in italics) is low, medium or high impact and which stakeholder is likely to be interested in being consulted.

Box 2: Example of Low Impact
This regulatory form prescribes the details and information that a motor car trader must record for each motor vehicle purchased. The regulation is considered low impact on the basis that businesses would record most of this information anyway for stock control purposes. However, the purpose of the dealings book is to provide traceability of the motor vehicle and the previous owner, the security held on the motor vehicle etc. The regulation is of minor interest to motor car traders but of significant interest to police as the dealings book provides a link in the detection of stolen motor vehicles.

Form 2 - DEALINGS BOOK
ACQUISITION DETAILS
Registration Number or, if unregistered, Trader's Stock Number
Make/model
Type of vehicle
Built date if it appears on the vehicle
Compliance date
Vehicle identification no (if the vehicle identification no is not available, other number capable of identifying the vehicle)
Date of acquisition
Odometer reading
**Name and address of person from whom vehicle acquired*
**Name and address of auction business from which vehicle acquired or received*
Security interest (if any) held by
Security interest (if any) amount paid out in discharge
Date security interest paid (if any)
**Signature of person from whom vehicle acquired*

**Signature of person authorised to sign on behalf of the auction business from which vehicle acquired or received*
**(delete whichever is inapplicable)*

Box 3: Example of Low Impact
Regulation 24A below seeks transparency of all matters in an agreement and would be considered a minor impact and not of great interest to motor car traders and consumers, although consumers would be interested if regulation 24A did not exist.

Regulation 24A Display of Information—Agreements and warranties
A motor car trader who enters into an agreement for the sale of a used motor car under section 41 or the sale of a new motor car under section 42 must ensure that any text included in the agreement is printed, typed or written in a clear and legible manner.

Box 4: Example of Medium Impact
The motor car trader compensation fund is funded from motor car trader licence fees and setting a cap on the maximum payment for a claim is intended to ensure the financial viability of the compensation fund. An uncapped payment on claims could lead in the future to higher motor car trader licence fees. Clearly, this regulation will be of interest to motor car traders but also consumers who may consider the prescribed maximum amount is too low to cover the cost of all types of motor vehicles.

Regulation 25 Maximum payment on a claim
For the purposes of section 77(4), the prescribed amount is $40 000.

Box 5: Example of Low Impact
As can be seen below, the retention of records for six years directly affects motor car traders in the type of documents prescribed for retention and the time period for retention. This would be of direct interest to primarily motor car traders. The regulation is considered low impact as most businesses would keep these documents anyway.

Regulation 26 Retention of records
For the purposes of section 83A, the documents to be retained for at least 6 years by motor car traders are—
(a) agreement for sale of a used motor car;
(b) agreement for sale of a new motor car;
(c) agreement for exchange of motor car;
(d) extended warranty documents;
(e) police checks given to the trader by persons employed in a customer service capacity;

Box 6: Example of Low Impact
This regulation shows that motor car traders must give copies of the agreement to their customer. This regulation will be of interest to motor car traders and consumers. The regulation is considered low impact on the basis that businesses would provide copies of these documents to their customers.

Regulation 27 Copies of Agreements
For the purposes of section 83C(1), copies of all documents listed in regulation 26 which are relevant to the transaction must be given to the person who buys, sells or exchanges a motor car.

Box 7: High Impact

As can be seen below, motor car traders must refund most of the purchase price to a buyer of a motor vehicle (according to the prescribed formula) if a buyer terminates the contract within the 3 business day cooling off period. Where the buyer exercises his/her cooling-off rights, the motor car trader has incurred a lost sale until as such time the vehicle is purchased by another buyer. The regulation is considered high impact due to the amount of the refund together with the lost sale. This regulation will be of interest to motor car traders and also consumer interest groups that may consider the residual amount kept by the motor car trader to be excessive.

Schedule 4 - PARTICULARS FOR SALE OF NEW MOTOR CAR
IMPORTANT INFORMATION—YOUR RIGHT TO COOL OFF

Under section 43 of the ***Motor Car Traders Act 1986****, if none of the exceptions listed below applies to you, you may end this contract within 3 clear business days of the day that you sign the contract. To end the contract within this time, you must give the motor car trader or the motor car trader's agent* ***written*** *notice that you are terminating the contract.*
If you end the contract in this way, you are entitled to a refund of all the money you paid EXCEPT—

- $400 or 2 per cent of the purchase price (whichever is greater) where this is not an off-trade premises sale; or
- $100 or 1 per cent of the purchase price (whichever is greater) where this is an off-trade premises sale. An "off-trade- premises" sale is one in which you agree to purchase the car while you are at home or at your workplace and you did not ask for the agreement to be signed at your home or workplace.
EXCEPTIONS—the 3-day cooling-off period does not apply if—
- the vehicle being sold is a commercial vehicle; or
- you are a motor car trader; or
- you are a body corporate; or
- you accept delivery of the vehicle within the cooling-off period.

IF YOU CHOOSE TO ACCEPT DELIVERY OF THIS VEHICLE WITHIN THE COOLING-OFF PERIOD, YOU WILL AUTOMATICALLY LOSE YOUR RIGHT TO COOL OFF

Table 1 below provides a summary of the analyses undertaken in boxes 2-7 in terms of the impact ranking and the affected stakeholders for each regulatory clause.

Table 1: Summary of Impact Analysis and Stakeholder Mapping

Regulation clauses	Impact	Affected Stakeholders
3 day cooling-off period for buyers	High	Motor car traders/consumers
Compensation fund maximum payment to buyer	Medium	Motor car traders/ consumers
Dealings book	Low	Police
Information in Sale Agreement to be legible or printed	Low	Nil
Copies of Sale Agreement provided to buyer	Low	Consumers
Retention of Records	Low	Motor car traders

3. Methods of Public Consultation

There is a range of different ways for Government to consult with stakeholders:

- Stakeholder meetings;
- One –to-one interviews;
- Roundtable discussions;
- Public meetings;
- Focus groups;
- Seminars/workshops
- Public surveys;
- Written submissions
- Public hearings;
- Web forums

Stakeholder meetings, one-to-one interviews, roundtable discussions, public meetings, focus groups and public hearings can be characterized as active methods of public consultation where there is an interactive personal exchange of thoughts and ideas, data and information, advice and expertise between Government officials and stakeholders and also between stakeholders in roundtable discussions, public meetings and focus groups.

Public surveys, written submissions and web forums can be characterized as passive methods of public consultation where Government publishes information on a policy issue or regulation and invites responses from stakeholders.

In most cases, it is likely that more than one method of consultation will be undertaken. The type of method selected will depend on the stage of the policy cycle and the level of knowledge the responsible Government agency has in respect to the policy issue and/or regulation.

At a minimum, advertising in a newspaper seeking written submissions in response to a regulatory impact analysis would be undertaken. In most cases, it is expected the following methods are applied: stakeholder meetings and advertising for written submissions.

The adoption of the other methods will depend on the Government's level of knowledge of a specific policy issue, the level of impact of a regulation and the Government's strategy.

Government officials need to ensure that public consultation is effective and efficient. In determining effectiveness, Government officials need to design a consultation plan using some of the above methods that will adequately meet the objectives of the consultation and to be accountable in ensuring that some consultation methods are not used that provide little value to the policy development and regulation-making process.

Public consultation involves a financial and resource investment and it is incumbent on Government officials to ensure the selection of consultation methods can be justified on effectiveness and efficiency grounds.

The advantages and disadvantages of each of these consultation methods are discussed below to help Government officials to identify the appropriate adoption of consultation methods for their specific policy development and regulation-making process.

Stakeholder meetings

At a minimum, stakeholder meetings are undertaken with the key affected stakeholders. That is, those stakeholders that are obligated to comply with the regulations and stakeholders likely to benefit from the regulations. In most cases, this will involve meetings with organizations that represent the affected businesses that will need to comply and other organizations whose constituency are likely to benefit from regulation.

Dependant on the level of impact, further stakeholder meetings may be held with individual firms and persons affected

Stakeholder meetings are held between government officials and each stakeholder in private. This allows each stakeholder to speak freely without interruption from other stakeholders.

Advantages

- Each stakeholder is able to speak freely in private.

Disadvantages

- Normally limits consultation to organizations representing those persons and businesses affected by the regulation and/or a small representative sample of persons and businesses affected by the regulation.

- An organization will either present the general experience of its members, or may be prone to exaggerating individual member cases as the normal experience of its members, or may not have a detailed knowledge of its members' issues.

One-to-one interviews

Stakeholder meetings are normally conducted in a manner where Government officials explain the purpose of the policy review or proposed regulation and seek views and feedback from the stakeholder. However, this process requires Government officials to take on face value the issues raised by the stakeholder.

A good way to verify the validity of issues is to conduct one-to-one interviews with affected stakeholders. One-to-one interviews do not have to be conducted in a formal way in a meeting room.

It requires Government officials to be well prepared in terms of the questions that they will ask and to be able to ask them in an informal and unstructured setting. For example, Government may want to understand the compliance costs of weights and measures regulation on the food industry. Government officials request meetings with a sample of small, medium and large food manufacturers. These food manufacturers walk the Government officials around the processing plant and explain the type of quality assurance system they use to comply with the weights and measures regulation. The Government officials use this demonstration to ask their questions such as:

- who would undertake the compliance role,
- how long does it take,
- how often is it undertaken.

The food manufacturer may also volunteer other information that has not been asked such as the costs associated with training staff, the cost to modify software measurement program, management systems established for product recall in the event that a non-compliant product was found in a retail outlet.

The outcome of the consultation may reveal a greater number of factors involved in the compliance cost than the Government officials first considered prior to the consultation. The Government officials will need to determine whether some of these factors are 'business as usual' costs (i.e costs that would occur in the absence of regulation). The consultation may also reveal that large and some medium sized food manufacturers use software measurement programs whereas small food manufacturers use paper-based measurement systems. The Government officials may not of been aware of software based measurement systems and will need to contact the software developers to ascertain what would be the likely cost to food manufacturers to make a modification to the software program.

In this example, several benefits of the consultation are apparent. The government officials have learnt about the true extent of the compliance costs and identified additional stakeholders to consult. They have underestimated the compliance costs when conducting a desk-top review. The food manufacturers were able to contribute to a better understanding of the compliance costs.

Roundtable discussions

Roundtable discussions are particularly useful for complex policies and regulations where there are strong competing views amongst the key affected stakeholders.

A roundtable discussion is convened and moderated by Government. In some cases where the key affected stakeholders have a strong distrust of the

Government's position, it may be better to engage an independent person to moderate the discussion.

The objective of a roundtable discussion is to identify the policy and regulatory issues of difference between the key affected stakeholders. This then allows the discussion to focus on the key points of difference.

An experienced moderator will seek to secure evidence from each stakeholder and to obtain multiple perspectives on a particular policy issue or regulation – invited persons share their opinions, expertise, identifying the extent of a problem, the causes and effects of a problem, suggest ideas and strategies to resolving the problem.

Provided the discussion is well-moderated, it gives each stakeholder at the roundtable discussion equal time to make a presentation.

To be effective and efficient, a roundtable discussion needs to be confined to the key affected parties represented by their organizations.

Advantages

- Enables Government to bring together the representatives of the key affected stakeholders at a single meeting and to understand their concerns.

- May generate mutual understanding of a problem, define feasible options to resolving the problem and raise potential implementation issues that may need to be considered.

- Some stakeholders may reconsider their position on the policy issue or regulation after learning from other stakeholders about specific issues, feasibility of options, costs, benefits, policy/regulatory effectiveness.

Disadvantages

- Effective roundtable discussions limit the participation of interested parties.

Public meetings

Public meetings are by definition open to any person interested in the policy issue and/or regulation and provide the clearest demonstration of openness and transparency in the policy development and regulation-making process.

Public meetings are particularly useful where the Government has little information about the extent of the problem, where business in the affected industry sector are not represented by an industry association, or the potential high impact of a regulation warrants consultation with a wider group of stakeholders.

Public meetings are resource intensive and require considerable planning in terms of organizing venues across a range of locations, finding and inviting individuals and businesses, managing the public meeting and recording the outcomes.

Advantages

- Provides Government with a list of issues to undertake further investigation;
- Provides Government with a list of affected stakeholders who may in turn provide additional contacts. These stakeholders may prove useful to assisting Government analyze specific policy issues and/or provide data for the assessment of costs and benefits;
- Provides a forum for affected stakeholders to be heard by Government (particularly relevant where an industry sector has lost faith and trust in Government);
- Provides a forum for affected stakeholders who do not feel comfortable preparing a written submission.

Disadvantages

- The issues raised are anecdotal based on personal experiences and will require Government to investigate further to verify the validity of the issues;
- Some of the issues raised may not be relevant to the scope of the regulatory review;
- Some attendees may not express their honest and personal opinions about the policy issue and/or the regulation. They may be hesitant to express their thoughts, especially when their thoughts oppose the views of another attendee.
- Government may loose control of the meeting if individuals with their own agenda attempt to politically hijack the proceedings by discussing unrelated matters.

Public surveys

Surveys provide a means of measuring a population's characteristics, self-reported and observed behavior, awareness of programs, attitudes or opinions, and needs. Public surveys can be conducted on-line, face-to-face interview, by phone or self-completed and returned by post. When determining the need for a survey, government agencies should first check that the required information is not already available (e.g National Statistical Office or an industry federation).

Advantages

- Can be developed in less time compared with other data-collection methods;
- Capable of collecting data from a large number of respondents;
- Survey software can be used to undertake statistical analysis.

Disadvantages

- Respondents may not provide accurate and honest answers (particularly in respect to financial matters);
- Answer options may be interpreted differently by respondents and result in unclear data outcomes.

Focus groups

Focus groups tend to involve small groups and can be useful to investigate causes for a particular problem, measure the reactions to a proposed regulation, or to receive feedback on compliance issues.

Advantages

- Lower cost to conduct compared with individual stakeholder meetings and one-on-one interviews;
- Allows stakeholders who cannot read or write to participate in discussions.

Disadvantages

- Some members may not express their honest and personal opinions about the policy issue and/or the regulation. They may be hesitant to express their thoughts, especially when their thoughts oppose the views of another participant.
- Likely to produce opinions/views that are not evidence-based

Seminars and Workshops

Once Government has collected a significant amount of data, information, ideas and advice from stakeholders from meetings, one-on-one interviews, roundtable discussions and possibly other consultation methods such as public surveys etc, it may be opportune to invite the key affected stakeholders to a seminar/workshop and present these initial findings and consideration of possible options.

Advantages

- Enables Government to receive feedback and validation from key affected stakeholders on the research and analysis it has undertaken to date prior to publication and wider public consultation.

- Enables Government to make adjustments to, or undertake further, research and analyses where key affected stakeholders have not been convinced that the quality of the research and analysis is robust enough.

Disadvantages

- There is a risk that some stakeholders opposed to the proposed policy or regulation may selectively leak some of the results of the preliminary findings and possible options to the media in a bid to undermine the process and to pressure the Government to not go ahead with the proposed policy or regulation.

Public hearings

Public hearings complement the consultation method of written submissions. Public hearings tend to be undertaken for complex policy issues and regulations that have a high impact across the economy or society, and involve many competing views across a wide range of stakeholders.

Normally, a regulatory impact analysis is published seeking written submissions. A public hearing is convened after written submissions have been lodged, read and assessed. Some submissions will raise material matters that could influence the policy development and/or regulation making decision but need to be further explored with the person or organization that has prepared the submission. A public hearing ensures transparency of this consultative process provided a transcript is recorded for each presentation and the interaction between the public hearing panel and the presenters.

Advantages

- Provides invited stakeholders with the opportunity to clarify issues in their submissions;

- Provides Government with the opportunity to make further inquiries, explore issues, clarify points that have been made in written submissions by affected stakeholders;

- A published transcript of each stakeholder's presentation ensures transparency.

Disadvantages

- Public hearings tend to limit the number of presentations to those that have lodged written submissions.

Written submissions

A standard form of public consultation involves Government making a public notice seeking public comments about a specific policy issue and/or regulation by the way of a written submission.

This form of consultation normally permits any person to make a written submission from 30 to 90 days from the date of the public notification calling for written comments on a policy issue and/or regulation. Complex policy issues and/or policy issues that are likely to attract a wide range of stakeholders generally require longer periods up to 90 days to enable affected stakeholders to gather appropriate evidence to present in a written submission. Box 8 below provides a common template for requesting comments at the commencement of a regulatory impact analysis document.

Box 8: Public Consultation – Request for Comments

A regulatory impact analysis document should have a section at the beginning of the document entitled, "Public Consultation" and provide the following information:

Public comments are invited on the regulatory impact analysis and accompanying Regulations. Copies may be obtained from the department's webpage at.....
or by email: .....or by telephone: .....

Written submissions will be received up to ....pm on .....2015 at the following address:

.....
.....
.....

or by email to: .....

All submissions will be treated as public documents.

Written submissions can be called for at any stage of the policy cycle. If written submissions are called for at the commencement of policy development, it is standard practice for Government to publish an Issues paper to provide guidance to stakeholders about the type of issues it is seeking comment. If written comments are called for during the policy development process, it is standard practice for Government to publish a Discussion paper, Draft report or a consultation regulatory impact analysis to provide information and guidance to stakeholders. Similarly, written comments are called for at the end of the policy development process with the publication of a final report or a regulatory impact analysis for decision.

This is an iterative process that enables stakeholders to be involved throughout the policy development process: allowing them to comment on the nature and extent of the problem and whether there is case for government intervention, on the possible options that could address the problem including the costs and benefits, and on the approach recommended by Government before it makes a final decision.

Advantages

- Enables affected stakeholders and any interested person from the public to make a written submission;

- Enables stakeholders to prepare a considered submission with supporting evidence.

Disadvantages

- Some stakeholders may not be able to present their concerns, issues and other matters in a coherent manner;

- Requires time and effort for most stakeholders to prepare a written submission.

Web forums

Web forums and other social media are being increasingly used by government agencies as a communication tool to its constituents. Care needs to be taken before adopting web forums for policy and regulatory reviews. Government agencies should ask the question whether a web forum or other social media tool can facilitate evidence-based data and information or is it going to produce a plethora of opinions (not always relevant to the subject) that will require significant resources to manage.

Advantages

- Enables stakeholders to participate who are unable to attend formal consultation, or are uncomfortable preparing a written submission or speaking in public;

- Web forums provide 24/7 access to a wider group of stakeholders than traditional consultative approaches;

Disadvantages

- Irrelevant issues may be raised and gain currency in further discussion amongst on-line participants that the review team may not be able to control;

- Tends to encourage opinions rather than evidence-based information;
- Can be resource-intensive and costly to identify useful information

4. Public Consultation Approaches during the Policy Cycle

There are three broad stages of public consultation. The first two stages involve targeted consultation and the third stage involves wide consultation with the community.

First stage: Understand the nature and size of the problem.
Second stage: Verify the costs and benefits of the various options to address the problem.
Third stage: Seek wider input from the public.
Fourth stage: Understand implementation issues
Fifth stage: Evaluate the effectiveness of the regulation (post-implementation)

The stage of consultation should not be viewed as the number of time consultation is undertaken. There may be instances due to the size of the impact of the proposed regulation and the extent of the impact across most groups within the community, that the third stage is undertaken twice. That is, a consultation RIA is prepared and open to wide public consultation and a final for decision RIA is prepared and open to wide public consultation prior to the government making a formal decision.

Each stage has distinct objectives. The objective of the first stage is to fully understand the nature and extent of the problem to determine whether there is a role for government intervention into the market.

The objective of the second stage is to determine whether the identified options are feasible, and the type of costs and benefits that are likely to be incurred from each of the feasible options.

The objective of the third stage is to discover any other issues that have not been identified from other persons and organizations that have not been involved in the targeted consultation stages. Importantly, wide public consultation demonstrates to the community the transparency of the government's regulation-making process. As part of this process, government needs to acknowledge written submissions and provide a response to the issues raised and the reasons for adoption or non-adoption of the issues and positions canvassed by persons in its final decision. The government also needs to formally notify the public with its decision and its reasons for any amendment to its original proposed regulation.

The objective of the fourth stage is to identify any implementation issues, particularly the proposed timing of when the regulations are to become effective. In some cases, affected stakeholders that will need to comply may need sufficient time to make changes to production and/or software management systems.

The objective of the fifth stage is to evaluate the effectiveness of the regulations post implementation. The evaluation should be undertaken about five years after the introduction of the regulation and involve consultation with the key affected

stakeholders, and where appropriate, subject experts from universities and institutes.

5. Case Study

The case study relates to the problem of road traffic fatalities and injuries in Thailand; specifically the government decision to ban children less than six years of age from being transported on a motorcycle. This is the same case study used in the RIA Guidelines and this should be read in conjunction with that case study. This case study primarily focuses on the stakeholder analysis and mapping undertaken for this proposed regulation across the policy cycle.

The responsible government agency for the regulation is the Office of Consumer Protection (OCP).

The first stage of public consultation

The first stage of public consultation focuses on understanding the nature and extent of the problem. A number of organizations have campaigned to save children from being killed and injured whilst being transported on a motorcycle. Some of these organizations claim several thousand fatalities associated with this activity. It is important to verify the extent of the problem. The OCP needs to know how many children less than six years of age transported on a motorcycle are killed or injured, the associated costs, the causes, the risks to children, and whether any regulation currently exists to address the problem.

A key constraint is that those directly affected by the problem are not easily identifiable. That is, the families that have experienced child fatalities and injuries on motorcycles.

Stakeholder analysis and mapping needs to be undertaken to identify stakeholders that could assist the OCP with developing a better understanding of the nature and extent of the problem.

The OCP needs to identify appropriate stakeholders to provide data on road fatalities and injuries. Who keeps road fatality and injury data? Basic internet research will quickly reveal that the Royal Thai Police maintain road fatality and injury data. Government agencies tend to provide high-level data on their websites so it would be advisable to contact the Royal Thai Police to find out whether it has unpublished data that may assist with estimating the extent of the problem.

Basic internet research also reveals the following organizations in Thailand that publish data on road fatalities and injuries:

- Save the Children Thailand
- Asia Injury Prevention Institute
- Thailand Accident Research Center
- Department of Transport

- National Statistical Office
-

Meetings with representatives from these organizations should be organized to find out whether they have any unpublished data or can provide contacts in road safety research at universities or hospitals.

Internet research also reveals road safety reports produced by international government agencies such as the:

- World Health Organization
- World Bank
- Asia Development Bank
- APEC
- ASEAN
- OECD

Many of these reports discuss and analyze child road accidents. It is sometimes useful to contact the authors of these reports by email to discuss methodologies, data limitations, findings of their research and to discover other research work being undertaken. The bibliography of these reports can sometimes provide a useful list of references and potential contacts to make further enquiries to identify other data research. Internet research can also be undertaken for academic research. Basic internet research reveals several Thailand universities and hospitals have been involved in road safety research (including for child fatalities and injuries).

- Khon Kaen Regional Hospital
- Ramathibodi Hospital
- Prince of Songkla University

The public consultation method applied would be direct face-to-face stakeholder meetings with the aforementioned stakeholders based in Thailand and email/phone meetings with international agencies and/or road safety experts.

The OCP would analyze the different data sets from the aforementioned stakeholders and reach a preliminary conclusion on the best estimate with low and high range estimates) of the extent of the problem.

It would be useful to conduct a workshop and present the analysis and findings of the nature and extent of the problem to the Thailand stakeholders that contributed in the first stage of public consultation. This is particularly pertinent where there are significant differences in the extent of the problem as is the case with child fatalities and injuries. The objective of the workshop is to gain acceptance from the contributing stakeholders about the extent of the problem and to discuss potential solutions.

Second stage of public consultation

The second stage of public consultation requires stakeholder analysis and mapping of stakeholders that will be affected by the proposed regulation to ascertain the cost to these stakeholders.

A ban would have a direct impact on families with young children where their primary mode of transport is the motorcycle. The OCP could identify and have meetings with a sample of pre-school centres and kindergartens to discuss the best method of collecting data from affected families about the cost to them in finding alternative transport options.

Unintended consequences of the proposed ban include low socio-economic families in areas without access to alternative public transport options particularly where they send their children to pre-school centres. To estimate the number of families and pre-school children that could be affected by the ban, several government departments would need to be consulted to collect data on the number of pre-schools without access to limited or no public transport options. The OCP would need to meet with:

- Department of Transport
- Department of Education

A ban would also have a direct impact on motorcycle taxis operators and the following affected stakeholders would need to be consulted:

- Motorcycle Taxi Association
- Motorcycle taxi operators

Motorcycle and alternative transport operating costs would need to be quantified. Several stakeholders may have the expertise to provide reasonable cost estimations. The following organizations would need to be consulted:

- Thailand Motorcycle Enterprises Association
- Department of Transport
- Universities/research experts that specialize in transport economics

An estimation of the expected level of compliance and enforcement effort will also provide an indication of the potential benefits of the proposed ban. The OCP should consult with:

- A sample of affected families
- Royal Thai Police
- Department of Transport

Third stage of consultation

The third stage of consultation requires feedback and confirmation of the costs and benefits of the proposed regulation and alternative. At a minimum, the OCP

would publish the consultation regulatory impact assessment on its website and advertise in major daily newspapers seeking written comments on the proposed regulation.

Depending on the public reaction to the proposal, the OCP may also want to conduct public meetings to allow a wider range of affected families and also motorcycle taxi operators to present their concerns.

Fourth stage of consultation

The OCP would publish a decision regulatory impact assessment including a summary of the issues raised in submissions from the third stage of consultation and the reasons for the government's decision to proceed with the proposed regulation. The OCP would seek final written comments.

Fifth stage of consultation

Subject to the government decision to proceed with making the proposed regulation, a fifth stage of consultation would be required to assist with implementation. This may require consultation with regard to timing. Affected stakeholders would include:

- Motorcycle Taxi Association and other associations representing alternative transport operators
- Department of Transport
- Royal Thai Police

Sixth stage of consultation

Several years after the introduction of the proposed regulation, the OCP should undertake an evaluation to ascertain whether the regulation has achieved the policy objective of preventing child fatalities and injuries incurred on motorcycles. This consultation will require extensive consultation with the stakeholders involved in the policy development process (stages 1 to 4).

6. Consultation Plan

Following stakeholder analysis and mapping, and the selection of the consultation methods, a consultation plan should be documented that outlines the following information:

- The government official who has approved the public consultation plan;
- A public consultation committee (particularly for large reviews and wide range of stakeholders) to discuss and recommend changes to the plan;
- The government officer responsible for project management of the public consultation process on a day-to-day basis;
- Identification of the likely key policy issues;
- Identification of the affected stakeholders;
- Risk assessment of the identified stakeholders that might jeopardize the review;
- Assessment and justification of proposed consultation method(s);
- Budget and resources required;
- Date/time and duration of each consultation method;
- Planning arrangements (locations, venues, equipment requirements);
- List of stakeholders to be invited to each consultation;
- Number and identity of attendees at meetings; and
- Follow-up actions arising from consultation

A GANNT chart could be developed to assist with project management particularly for large reviews involving many stakeholder groups and meetings with key milestones that need to be delivered prior to the consultation method used. For example, the date notices need to be submitted and advertized in newspapers, the date invitations need to be sent, the date documents and/or speaking notes for a moderator need to be prepared, the deadlines for organizing various logistic arrangements (booking venues, equipment, catering etc), dates for internal approval to conduct various aspects of the consultation and so forth. In addition, the GANNT chart would identify the government officer responsible for each task.

The consultation plan is a live document during a review and should be updated or amended where strategic or logistical changes occur or where additional consultations are undertaken.

7. Stakeholder Engagement

Government communication with stakeholders is critical to ensuring their attendance and participation in the public consultation process.

To ensure transparency of the policy development and regulation-making process, departments should establish a consultation section on their websites and provide at a minimum:

- summary of the review process including the number of consultation stages prior to decision;
- relevant downloadable documents such as an issues paper, draft reports, consultation regulatory impact analysis;
- information on consultation meetings (purpose/date/time/venue);
- information on how to make a written submission;
- the timeframe for lodging written submissions;
- publication of all written submissions; and,
- contact person for enquiries with their email address/phone number.

Invitations for public consultation

Send invitations to stakeholders by email or post and seek written confirmation of their acceptance by requesting RSVP by a specific date. Invitations should be sent out at least 2 weeks and preferably 4 weeks for consultation meetings such as public meetings and roundtable discussions that involve many stakeholders. This provides stakeholders with the opportunity to make arrangements to attend the meeting. Email provides traceability that an invitation has been sent to and received by a stakeholder, and provides evidence that Government has invited a specific stakeholder. This is important to deflect any public criticism that Government has not attempted to consult with affected stakeholders.

Public meetings and the call for public comments by way of written submissions will require notification. The responsible department should provide notification of the public meeting and public comments on its website.

Record consultation outcomes

Record and document the key points raised by a stakeholder and any follow-up actions arising from the discussion.

Response to written submissions

Receipt of written submissions should be acknowledged. A short standard letter should be sent by email or post by the department to all persons and organizations that have lodged a submission advising them that the department has received their submission.

Provide a written response to each person, business and organization that made a written submission after the Government's final decision has been made and

the reasons for accepting or not accepting the points of concern in the submission.

8. Evaluation

Evaluation of the public consultation process provides an opportunity to assess the value of stakeholder contribution to the policy development and implementation process, whether stakeholder participation resulted in changes to regulatory design, to assess the effectiveness and efficiency of the project management and to learn from mistakes and improve future public consultation strategies and practices.

An evaluation requires internal and external review given that government officials/officers and external stakeholders were involved in the public consultation process.

Internal review

Value of stakeholder participation

Where appropriate, identify the stakeholders and their contribution that led to an amendment to the original regulatory design prior to public consultation.

Identify the stakeholders that value-added to the policy development and the type of contribution (data, information, advice) they made to better understanding the nature and extent of the problem, the costs and benefits, and identification of alternatives.

Identify the stakeholders that assisted with improving the government agency's network of stakeholders, facilitated meetings with specific affected stakeholders and assisted with organizing and/or convening consultation meetings.

Project Management

Assess whether the public consultation process was executed in accordance with the consultation plan in terms of consulting with the identified stakeholders on time and within budget.

Identify the tasks or aspects of the consultation plan that were not undertaken or completed, and the reasons.

Identify any stakeholders listed in the consultation plan that did not participate and the reasons for their non-participation.

Consider future strategies that could engage a stakeholder who refused to participate in the consultation process.

External review

The key affected stakeholders and other stakeholders that contributed to policy development should be surveyed to obtain their feedback about the quality of the review, the public consultation process and suggestions for improvements. For key affected stakeholders, it might be better to have face-to-face meetings in recognition of the time and effort that these stakeholders may have contributed during the policy development and implementation.

9 Checklist for Effective and Efficient Public Consultation

Checklist for Effective and Efficient Public Consultation

Analysis of the policy issue and regulation

1. Analyze the type and impact of the policy issue and regulation and categorize the likely affected groups.

2. Undertake stakeholder analysis and mapping

Planning

3. Analyze the extent of the Government's knowledge on the policy issue or costs and benefits of the regulation and select the most appropriate consultation methods.

4. Prepare a consultation plan with a timescale of when each consultation method will be undertaken, the planning arrangements (locations, venues, equipment requirements), and the list of stakeholders to be invited to each consultation.

Conduct Consultations

5. Make a record of the Government officials, persons and organizations that attended consultations with the date/time and location of the meeting. Document the material issues raised and the outcomes of the meeting.

6. Update the consultation plan where additional consultations are undertaken post development of the consultation plan.

7. Provide written acknowledgement upon receipt of written submissions.

8. Publish written submissions (other than those that may contain commercially sensitive information) on the government's website.

9. Provide a written response to each person and organization that made a written submission after the Government's final decision has been made, and the reasons for accepting or not accepting the points of concern in the submission.

Evaluation

10. Undertake an evaluation post the policy review or regulation-making process on the effectiveness and efficiency of each consultation method used and the lessons learnt.

Regulatory Impact Analysis Course Curriculum for the Thailand Government

Objectives for the Course

Regulatory impact analysis (RIA) is widely applied by OECD and APEC countries. RIA provides government and the community with analysis of the nature and extent of economic, social and environmental problems to determine whether government intervention is justified, and the costs and benefits of regulatory and non-regulatory options to prevent or reduce a particular problem. This helps to facilitate informed decision-making in selecting the most superior option that addresses the problem; provided the benefits outweigh the costs.

The two-day course provides an introduction to regulatory impact analysis with a particular emphasis on the nature and extent of the problem. The analysis of the nature and extent of the problem provides the foundation for the RIA. In-depth analysis enables clear definition of the problem, the causes of the problem, the groups and or sub-groups causing the problem, provides the required data for the assessment of the benefits and helps to identify potential regulatory and non-regulatory options to address the problem.

Cost benefit analysis and some of the common complementary methodologies such as break-even analysis, cost effectiveness and multi-criteria analysis are also covered in the course. However, cost benefit analysis and other methodologies can be learnt from a wide array .of textbooks and government cost benefit analysis guidelines and manuals. A list of resources is provided in the recommended reading list.

The objectives of the course is to clearly demonstrate the advantages of undertaking in-depth problem analysis that is evidence-based (supported with empirical evidence) and how this approach leads to the identification of better regulatory and non-regulatory outcomes that meet the policy objective but in a more efficient way.

Another key objective is to clearly demonstrate the identification of costs and benefits, particularly unintended consequences of an option and how this can lead to further economic and social problems.

At the end of the two-day course, participants should have grasped the conceptual thinking that is required to undertake an in-depth problem analysis and impact analysis. With this knowledge, participants can read RIA Guidelines and Cost Benefit Analysis Guidelines and apply the valuation and measurement of costs and benefits in a consistent and appropriate manner during the preparation of a RIA.

Case studies are used widely throughout the course to help participants to understand the key concepts.

Course Curriculum

Day 1 Topics

1. Objective of the Course

Participants should not be under any illusion that attending a two-day course on regulatory impact analysis will make them an RIA expert. Instead, the objective of the course is to focus on critical aspects that are not normally covered in RIA Guidelines and cost benefit analysis handbooks. In doing so, participants should be able to develop an appreciation of the critical appraisal and analytical skills required to undertake public policy analysis and to prepare a RIA.

The two-day course provides an overview of cost benefit analysis techniques. An intelligent person can download any of the recommended RIA Guidelines and cost benefit handbooks to obtain information on how to apply cost benefit analysis and other measurement methodologies. Most of these publications provide working examples that are self-explanatory.

Sections 2 to 4 provide background on the role of government, the different roles of government and the relevance of regulatory impact analysis in deciding whether there is a role for government in relation to a specific economic, social or environmental problem.

Sections 5 to 7 provide an overview of the assessment of regulatory and non-regulatory options using cost benefit analysis and other methodologies, the public consultation process and the application of corruption impact assessment to improve transparency and accountability.

Participants will learn that the preparation of a high quality RIA requires a wide range of skills and that most persons do not have all of the required skills. Hence, it is recommended, particularly for complex and high impact policy and regulatory issues, that a multi-disciplinary team approach (including seconding external experts from other departments and/or universities) should be undertaken to assist with the preparation of a RIA.

2. The Role of Government

Government policy seeks to improve efficiency by correcting a market failure. The main forms of market failure are:

- Market power;
- Natural monopoly;
- Imperfect information;
- Externalities; and,
- Public goods

Participants will learn the basic economic concepts of the main forms of market failure but also appreciate that governments have a track-record of regulatory failure.

3. Different Roles of Government: Economic, Social and Administrative Regulation

Economic regulation controls pricing and the entry and exit in specific industries. Economic regulation can have significant implications for market competitiveness, consumers and innovation. Social regulation controls business conduct and/or consumer behaviour. Administrative regulation controls the way a regulator interacts with regulated parties or controls the conduct of state-owned enterprises. Regulatory design for each of the three categories of regulation can affect the level of efficiency in the economy in different ways.

Participants will learn the basic taxonomy of economic, social and administrative regulation and the key features and the type of market failure associated with each type of regulation.

4. The Role of Government and the Relevance of RIA

To determine whether there is a role for government intervention into the market, government needs to firstly know the nature, size and causes of the problem, and secondly, identify feasible regulatory and non-regulatory options, and thirdly, undertake a cost benefit analysis of the identified options to ensure the option that provides the greatest net benefit to the community will address the problem.

Participants will learn the key attributes of regulatory impact analysis and the associated importance of public consultation, accountability and transparency in the regulation-making process.

5. RIA Structure

Regulatory impact analysis is a published document and comprises a standard set of elements that is contained in the RIA template to ensure a consistent approach is taken with the preparation of RIAs across the whole of government.

Participants will learn the purpose of RIA, the key elements of RIA and the critical parts of RIA.

5.1 Nature and Extent of the Problem

The analysis of the nature and extent of the problem provides the foundation of the RIA, and the quality of the analysis will determine the quality of identifying appropriate alternatives and the robustness of the cost benefit analysis of the alternatives (options) later in the RIA. In-depth problem analysis provides the basis for clear definition of the problem and the causes of the problem. In-depth problem analysis provides regulatory reform opportunities later in the RIA.

Using several case studies on economic, social and environmental regulation, participants will learn that in-depth problem analysis leads to the efficient design of regulatory and non-regulatory outcomes. By contrast, participants will learn the limitations of high level problem analysis and how this often leads to over-regulation.

Participants will learn the key questions that need to be explored and the steps or processes in undertaking problem analysis and how these steps and processes were applied in the several case studies. The case studies will show how in-depth problem analysis led to regulatory reform outcomes.

Participants will work together in selecting a policy or regulatory topic and identify and analyze the nature and extent of the problem using the key questions from the RIA Guidelines.

5.2 Policy Objective

The policy objective needs to be clearly defined and outcome focussed to ensure the selection of alternatives or options can potentially address the problem.

Participants will be provided with several good and bad RIA case studies to demonstrate how the drafting of policy objectives can impact the selection of alternatives (options) to address the specific problem.

5.3 Identification of Options

A fundamental stage in the policy development process is the identification and assessment of all feasible alternatives to the problem being addressed. Unless a full and proper assessment of feasible alternatives is undertaken, the regulatory proposal adopted may not represent the best solution to the problem. Thus, it is important to consider what the most effective tool will be to achieve the desired outcome.

Participants will learn the standard alternatives (options) that are normally considered: self-regulation, co-regulation, negative licensing, public information and market-based instruments; and the techniques for determining whether they are feasible to address a specific problem.

Day 2 Topics

5.4 Cost Benefit Analysis

The key steps of undertaking cost benefit analysis including an understanding of the economic concept of opportunity cost is required to enable the measurement of costs and benefits of alternatives (options) and identification of the superior option to address the stated problem.

The case study in the RIA Guidelines will be used to demonstrate the identification and measurement of costs and benefits to address a social problem.

Participants will learn the key steps in preparing a full and partial cost benefit analysis and work together identifying and analysing the costs and benefits of the policy or regulation they discussed in the nature and extent of the problem analysis from Day 1.

5.5 Other Methodologies

When the benefits of the policy options cannot be sufficiently or confidently quantified and monetized, a partial cost benefit analysis should still be undertaken with supplementary decision-making tools such as break-even analysis, cost effectiveness and multi-criteria analysis to assist in comparing or ranking options.

Participants will learn how to apply break-even analysis, cost effectiveness and multi-criteria analysis and the limitations of these methodologies.

6. Public Consultation

Public consultation is an integral part of the preparation of a RIA and needs to occur prior, during and after the preparation of the RIA. Public consultation with affected stakeholders helps to improve government understanding of the size and causes of the stated problem., to identify feasible alternatives (options) and to improve the robustness of the cost benefit analysis.

Participants will learn the key stages of public consultation across the policy cycle using the case study in the RIA Guidelines as well as good and bad RIA case studies.

7. Corruption Impact Assessment

The corruption impact assessment is designed to examine, evaluate and remove, where appropriate, corruption-causing factors in laws, regulations and other legal instruments.

The Guidelines are designed to assist government agencies with identifying corruption-causing factors in legislation, regulations and other legal instruments and the supporting institutional arrangements, and to develop and implement appropriate strategies to remove identified corruption-causing factors.

Participants will learn the key questions that need to be explored using case studies in the Guidelines to identify good and bad examples.

8. Recommended Reading Listing

Australian Government Handbook of Cost Benefit Analysis, 2006
http://www.finance.gov.au/sites/default/files/Handbook_of_CB_analysis.pdf

New Zealand Guide to Social Cost Benefit Analysis, 2015
http://www.treasury.govt.nz/publications/guidance/planning/costbenefitanalysis/guide

OECD Introductory Handbook for Undertaking Regulatory Impact Analysis RIA, 2008
http://www.oecd.org/gov/regulatory-policy/44789472.pdf

Thailand Government RIA Guidelines

Thailand Compliance Cost Measurement Framework

Thailand Government Public Consultation Guidelines

Thailand Government Corruption Impact Assessment Guidelines

Winston, C, Government Failure versus Market Failure, AEI Brookings Joint Center for Regulatory Studies, 2006
http://www.brookings.edu/~/media/research/files/papers/2006/9/monetarypolicy-winston/20061003.pdf

REGULATORY IMPACT ANALYSIS GUIDELINES

FOR THE THAILAND GOVERNMENT

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Purpose of the Guidelines

Regulatory Impact Assessment (RIA) is a popular tool used by most OECD countries and increasingly by APEC developing countries. RIA is used to review existing and new legislation and regulation.

RIA provides a robust analytical approach using cost benefit analysis to evaluate the costs and benefits to ensure a regulation provides a net benefit to society.

The benefits of RIA are numerous but some of the key benefits include improving business productivity, reducing business costs, creating a business environment to invest, grow and create jobs, improving consumer choice, protecting the environment and public health and safety, and providing a foundation for improving the standard of living.

Thailand adopted the OECD Reference checklist for regulatory decision-making in 1995 and has been committed to undertaking RIAs for legislation and regulation. However, the OECD Checklist only provides a list of principles and little guidance on how to undertake RIA. As a result, a government study "RIA Situation in Thailand" found a high level of unawareness of the requirement to conduct RIA and very few RIA being prepared for Government.

Most developed countries that have introduced RIA have developed guidelines and training to support the OECD RIA Checklist. This is necessary in order to provide government agency officers with the necessary knowledge and skills to prepare RIAs.

Developed countries that have been using RIA for over thirty years have been able to improve the quality and efficiency of regulation resulting in significant cost savings to business and citizens in the hundreds of millions of dollars.

Thailand's global competitiveness ranking in 2014 was 29 out of 60 countries and scored 38 on the corruption perception index. The index indicates the perceived level of public sector corruption on a scale of 0 (highly corrupt) to 100 (clean).

The introduction of RIA similar to other developed countries will provide Thailand with the potential to improve its competitiveness ranking and to help remove corruption in its legislation and regulations. In doing so, the adoption of RIA will facilitate reforms that deliver improved standards of living and reduce income inequality.

The purpose of these Guidelines is to provide a framework for government agency officers to better understand the RIA process and to develop the appropriate skills in the Government's RIA training program.

The Guidelines cover the following topics:

- Introduction
- Scope and application of RIA
- The key elements of RIA
- Public consultation processes
- Corruption Impact Assessment
- RIA Case Study

1. Introduction

Government regulation is sometimes necessary to achieve certain economic, social and environmental goals. However, excessive or poorly designed regulation can impose costs on society that outweigh the benefits of regulation. These costs can have negative implications for overall economic performance, including competition, business costs, consumer choice, employment and investment opportunities.

To avoid the problems caused by poorly designed regulation, it is essential that government should not resort to regulation unless it has compelling evidence that:

- a problem exists;
- government action is warranted; and
- regulation is the best option available to government to deal with the problem in an efficient and effective manner.

Regulatory impact assessment (RIA) is a document that analyses the problem, the need for government intervention into a market, and the costs and benefits of feasible options to deal with the problem.

The purpose of the RIA is to ensure that affected stakeholders and the wider community have an opportunity to comment on all aspects of the RIA and the proposed regulation. In effect, public consultation provides government with the opportunity to seek reassurance from those directly affected that a problem exists, the scope and scale of the problem has been defined and the proposed regulation is the best option to deal with the problem. Accordingly, the RIA helps government to make an informed decision before it introduces a law or regulation.

Accordingly, best practice RIA countries have integrated the key features of the RIA process into policy development to ensure the preferred policy response has been rigorously assessed and is the best option. This is a superior approach compared to making a decision on a particular policy response and subsequently undertaking the RIA process.

The government strongly encourages its departments to integrate the key features of the RIA process into policy development to facilitate the selection of the best option and to avoid unnecessary delays to the government's response to economic, social and environmental problems.

Some OECD countries have been using RIA for over thirty years and have strengthened the standards in their RIA Guidelines over time to further improve the quality of RIAs. This has resulted in the adoption of a greater range of methodologies and approaches. In these countries, government departments have been able to learn and adjust to incremental changes to the RIA Guidelines.

Thailand is essentially at the beginning of the RIA journey and has decided to commence that journey learning and applying the fundamentals of the RIA process. The adoption of 'best practice' RIA Guidelines from some OECD countries could over-whelm government departments that do not have experience with the RIA process and jeopardize whole of government support and adoption of the RIA process.

The key feature of the RIA process that is critical to the government's success to deal with economic, social and environmental problems is the first part of the RIA; the nature and extent of the problem.

It is critical for the following reasons. Firstly, the sole reliance on high-level aggregated data to demonstrate that a problem exists will invariably lead to poorly designed regulation that fails to deal with the problem, and in most cases, will unnecessarily regulate some parts of the community; imposing additional costs that makes the targeted sector less efficient and competitive.

The following is an example of the use of high-level aggregated data. Liquor licensed premises were the third most frequent type of premises (behind residential and outdoors) for reported assaults, with data suggesting 66.7 per cent of all assaults were alcohol-related.

The limitations with this high level aggregated data is that it suggests that most liquor licensed premises are likely, at some stage, to lead to alcohol-related violence. A further problem with this reliance on high level aggregated data is that the solution will be developed and applied to all liquor licensed premises.

All OECD countries struggle to perform high quality analysis of the nature and extent of the problem and care should be taken in using RIAs from other countries that primarily use high level aggregated data.

Secondly, if the nature and extent of the problem is analyzed in appropriate detail with supporting empirical evidence it is likely to reveal, in some cases, a range of options to deal with the problem, and importantly avoid applying any policy solution to parts of the community or industry sectors that are not responsible for the problem.

Using the same example about liquor licensed premises, the use of disaggregated data reveals a different picture of the problem: In Sydney, 27 or 12 percent of hotels and nightclubs accounted for almost 60 percent of all assaults at hotels and nightclubs. 7 or 3 per cent of the 27 hotels recorded 26 percent of all assaults.

A study in Newcastle found that of the 400 or more licensed premises in the area, only 21 or 5% had an above average number of alcohol-related incidents, with four premises or 1% of licensed premises accounting for a large majority of these incidents.

At Kings Cross, which has the highest rate of assaults, in excess of 20 percent of the assaults were recorded at just 3 licensed premises; a bar/restaurant, a bar/nightclub and a bar/strip-club. A similar outcome was found at Wynyard/The Rocks area where 23.3 percent of assaults were recorded in or near 3 licensed premises.

This data analysis changes the size and extent of the problem to a handful of liquor licensed premises compared to the high level data that suggested a widespread problem amongst liquor licensed premises. Accordingly, while further causal analysis is required in respect to the handful of liquor licensed premises, it is clear that applying a regulatory solution and the associated costs to most liquor licensed premises would adversely impact on these businesses and its patrons.

Thirdly, provided the causes and the extent of the problem can be clearly defined and the costs of the problem can be quantified, the rest of the RIA is relatively straightforward in terms of undertaking a cost benefit analysis of the selected options. The costs quantified in the problem section of the RIA are later treated as the potential benefits in the assessment of the various options.

Many OECD member country RIAs make claims of market failure in the nature and extent of the problem but provide very little supporting empirical evidence. In many cases, regulatory failure is far more common and there is a litany of published studies on inefficient and ineffective regulation.

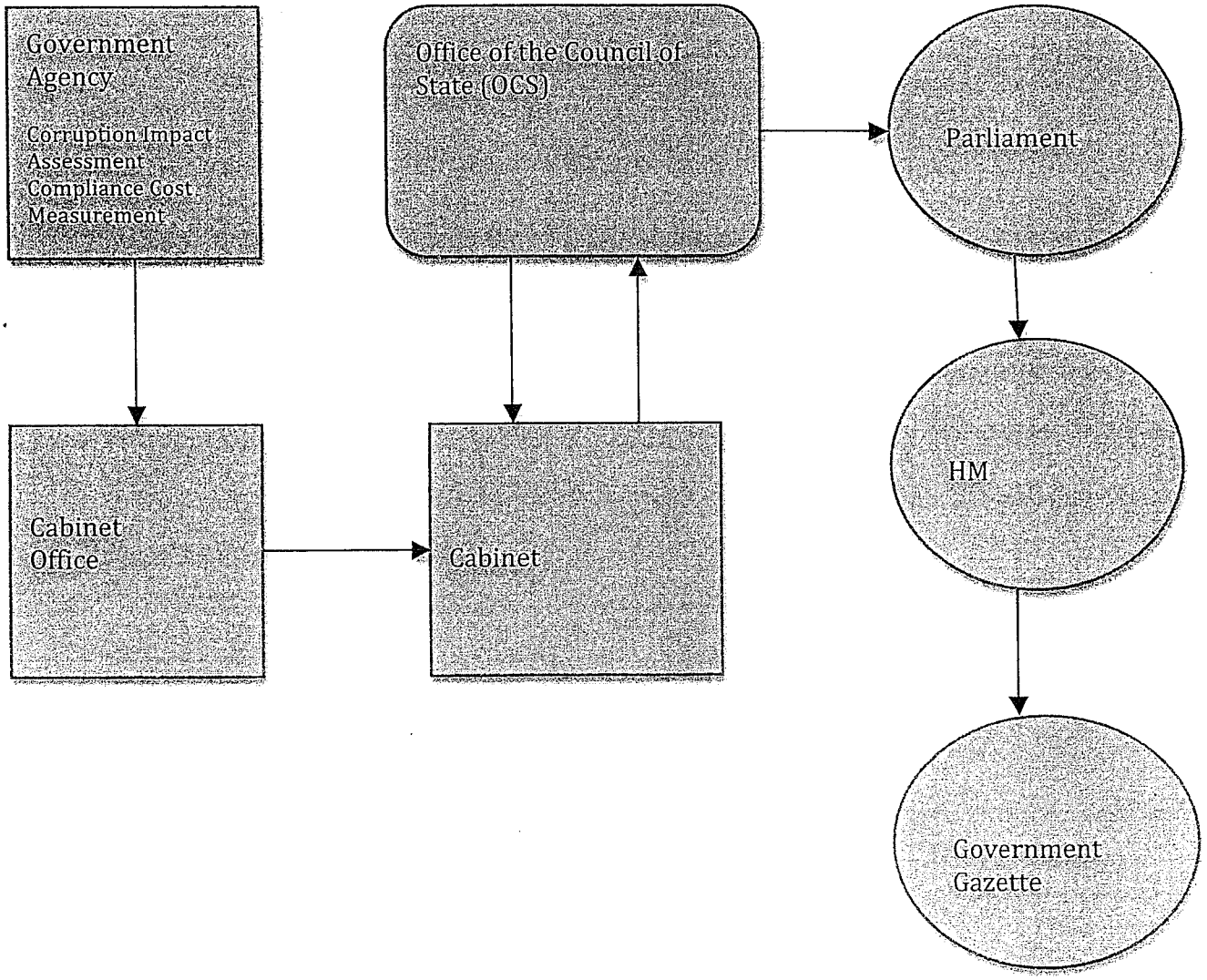
Accordingly, all governments and civil servants should apply the principle of caveat emptor to all policy issues and turn over every stone to ensure that regulation is really needed and will achieve the policy objective at minimal cost to the community!

2. Scope and Application of RIA

The corruption impact assessment and compliance cost measurement framework should be prepared for new and amending legislation by responsible government agencies prior to submitting proposed legislation to the Cabinet Office as shown in the diagram below.

Regulatory impact analysis (RIA) will be initially prepared by government agencies to existing primary legislation and other forms of subordinate legislation. Once the RIA system is embedded within government, RIA will need to be prepared for new and amending legislation and submitted to the Cabinet Office together with the proposed legislation.

Thailand Legislative Process



3. The Key Elements of Regulatory Impact Analysis (RIA)

Overview

A RIA is comprised of the following seven parts:

1. Identification of the problem
2. Objectives
3. Identification of Options
4. Assessment of Options
5. Preferred Option
6. Consultation
7. Proposed Regulations

Parts 1 and 4 entail most of the content in a RIA.

The key issues that need to be dealt with are discussed below for each of the seven parts. As will be seen the key issues are discussed at a general and high level. This has one obvious limitation. Each reader will interpret differently the expected level of detailed analysis. To obviate this, these Guidelines provide a case study of how to apply the key parts of a RIA to an actual case study to demonstrate the level of analysis and critical thinking required.

3.1. Identification of the problem

A key weakness in RIAs prepared by OECD member countries is the tendency to limit the problem section to an overview of the problem at a high-level with aggregated data. In many cases, the actual causes are not analysed. This generally leads to an overstatement of the problem and results in an overstatement of the benefits later in the cost benefit analysis section. This makes it easier to justify the introduction of new regulations. However, it is also likely to lead to over-regulation, increased regulatory burden and non-delivery of the policy objective, for example to save lives, to protect the environment and so forth.

The problem section is the most critical part of the RIA. It provides the opportunity to understand the problem properly and to find solutions that are commensurate with the size of the problem.

To prepare a high quality analysis of the problem, you require superior analytical skills and a willingness to find and develop analyses where no data or limited data exists about the problem.

A key challenge for anyone preparing a RIA is to deal with the differing perceptions and positions of key stakeholders, including government. It is only natural that everyone in the community has a different understanding of a problem; mostly due to their limited access to knowledge of the problem.

The challenge is even greater where a Minister has made a public announcement to introduce a law or regulation or the government has an election commitment to introduce a law or

regulation to resolve a particular problem. Many civil servants preparing a RIA feel compelled to justify the Minister's position or the government's election commitment. In doing so, these RIAs misrepresent the size of the problem by excluding critical data and analyses.

It is important for Ministers and Governments to be properly advised. If your analysis of the problem is different to the Government's perception of the problem, it needs to be advised accordingly. Remember, the purpose of the RIA is to enable the decision-maker (Government) to make informed decisions. If you do not undertake a detailed analysis of the problem or omit critical analyses that would materially change the outcome of the preferred regulation, you are not providing the Government with the opportunity to make an informed decision.

Your responsibility is to give the Government the opportunity and choice to decide whether the size of the problem is x or y or z and whether they want to proceed with the preferred regulation. That is their decision. Not your decision. Just make sure that you give them the best information, not just the information you think that they want to hear!

The benefits of robust analysis of the nature and extent of the problem:

- Confirm or refute the perceived extent of the problem;
- Enable key stakeholders to make informed comments;
- Enables some key stakeholders to reconsider their previously held positions where the extent of the problem is greater or lesser than their perception of the problem;
- Enable government to make policy adjustments if the analysis of the nature and extent of the problem is materially less than the perceived magnitude and impact believed prior to the analysis. Policy adjustments could include amendments to the design of the proposed regulation so it is commensurate with the size of the problem, withdrawal of the proposed regulation, adoption of other policy alternatives that are more likely to be commensurate with the size of the problem, or a decision that there is no role for government given that other regulatory schemes address the problem or market failure was not demonstrated.

It is imperative that the proposed regulation and feasible alternatives match the nature and size of the problem. For example, if the proposed regulation is to ban children less than six years of age being transported on a motorcycle, the size of the problem must exclude motorcycle fatalities and injuries for children over six years of age as well as other fatalities and injuries incurred by other modes of transport: car, bus, truck, minivan, lorry, tractor, pedestrian etc. The purpose of the problem analysis is to measure the number of children less than six years of age that are killed or injured traveling on a motorcycle.

A robust analysis of the nature and extent of the problem is critical to regulatory reform and the development of good regulation that is efficient and effective. The following questions need to be explored and answered.

- Who is affected by the problem?
- What is the scope and scale of the problem?
- Is the identified problem a part of a larger problem? If so, what is the size of the identified problem relative to the larger problem?
- What is the cause of the problem?

- Is there sufficient empirical evidence that a problem exists?
- Is the extent of the problem identified or is its identification based only on anecdotal evidence?
- What are the economic, social and environmental costs of the problem, and who bears these costs?
- Does the problem exist currently, or is it merely anticipated?
- Is the problem a minor irritant or a significant hazard?
- Are there any technological, economic, political, administrative, social and/or environmental constraints that are relevant to the problem?
- Are there existing regulations that could deal with the problem? If yes, why are these regulations inadequate?
- What are the consequences of not taking any action?
- Could relying on the market in conjunction with the general application of existing laws and regulations solve the problem? If not, why not?
- What is the experience in other jurisdictions with different regulatory frameworks?
- What is the scope and scale of the problem in unregulated jurisdictions?
- Has the scope and scale of the problem increased/decreased in unregulated jurisdictions due to market, technological, regulatory or environmental changes?

3.2. Objectives

To enable proper formulation of policies, it is necessary to give careful consideration to the desired outcomes. Unless the policy goals are clearly specified, the identification of appropriate alternative means of achieving them will be compromised.

Particular care should be taken to ensure the objective is defined broadly and is not confused with the strategy for its achievement. For example, a reduction in motorcycle fatalities is an objective whereas compulsory wearing of motorcycle helmets is one strategy or means for achieving this objective. Focusing on a strategy rather than the general outcome will hinder a full and proper consideration of alternative means of achieving the desired outcome. That is finding the solution to the problem. The objective should identify the ends to be achieved or the broad policy outcomes desired rather than the means of its achievement.

3.3 Identification of Options

A fundamental stage in the policy development process is the identification and assessment of all feasible alternatives to the problem being addressed. Unless a full and proper assessment of feasible alternatives is undertaken, the regulatory proposal adopted may not represent the best solution to the problem. Thus, it is important to consider what the most effective tool will be to achieve the desired outcome.

Preliminary consideration of the range of options available to achieve the stated objective may identify some options that appear, after closer examination, inappropriate and unworkable. In these cases, the option should be discarded and a brief explanation provided why the option(s) is not feasible.

The remaining feasible options should be further examined in greater detail in order to provide a solid basis for a cost benefit analysis. In particular, greater detail on the likely operation of the options will address how each option will be adapted so as to provide a solution to the problem as well as potential impediments.

Depending on the option, the following questions may need to be considered:

- How would the alternative work?
- What role does government have?
- Is there sufficient commonality of interest, within an industry or professional association to ensure high levels of voluntary compliance?
- How will consumer interests be represented?
- Does the alternative discriminate against persons/groups/industries?
- Is the alternative legally feasible?
- Does the alternative restrict competition?
- What monitoring will be required and how would monitoring occur?
- Is the alternative likely to be enforceable?
- Will non-compliance be evident?

3.4. Assessment of Options

Cost benefit analysis measures the efficiency or resource allocation effects of a regulatory change and alternative options. It calculates the dollar value of the gains and losses for all people affected. If the sum is positive, the benefits exceed the costs. The option that provides the greatest net benefit provides the most efficient resource allocation.

Cost benefit analysis:

- provides decision makers with quantitative and qualitative information about the likely effects of each option

- encourages decision makers to take account of all the positive and negative effects of each option, and discourages them from making decisions based only on the impacts on a single group within the community

- assesses the impact of each option in a standard manner, which promotes comparability, assists in the assessment of relative priorities and encourages consistent decision making

- captures the various linkages between the regulatory proposal and other sectors of the economy (for example, increased safety may reduce health care costs), helping decision makers maximize net benefits to society, and

- helps identify cost-effective solutions to problems by identifying and measuring all costs.

Even when it is difficult to estimate some costs or benefits with precision, cost benefit analysis makes clear and transparent the assumptions and judgements made. Further, attempting to quantify costs and benefits encourages analysts to more closely examine these factors.

For most regulations, costs are normally more evident, measurable, concentrated on one group and immediate (in term of time) compared to benefits, which are often less easy to measure, more widespread and long-term.

Steps in preparing a full cost benefit analysis

1. Specify the set of options
2. Decide whose costs and benefits count
3. Identify the impacts and select measurement indicators
4. Predict the impacts over the life of the regulatory proposal
5. Monetise (attach dollar values to) impacts
6. Discount costs and benefits to obtain present values
7. Compute the net present value of each option
8. Perform sensitivity analysis
9. Conclusion

If you are unfamiliar with cost benefit analysis, you should refer to a reputable economic textbook or governments that have published on this subject. The Australian Government's Handbook of Cost Benefit Analysis (2006) provides guidance and detail across a wide range of possible policy issues. This can be downloaded from the internet.

Other relevant publications can be found on the OECD's regulatory reform website and most OECD member countries publish RIA on their websites. This resource should be used to obtain RIAs from other countries to ascertain how they measured costs and benefits on the policy issue you are working on and also to benchmark the analysis of the problem and regulatory frameworks.

3.5. Preferred Option

A comparison of the benefits, costs, net benefit and benefit cost ratios for each option should be summarized in a table to enable the reader to quickly compare the different outcomes.

Ideally the quantifiable costs and benefits will be discounted to generate a net present value that is greater than zero.

Some costs and benefits may be difficult to quantify. A qualitative account of these costs and benefits may be used.

Government regulators and agencies should not be concerned if the proposed regulatory option is not the best option or imposes a net cost. It should be remembered that the cost benefit analysis framework is not a precise process (given that not all costs and benefits can be quantified) and the purpose of the RIA is to seek further input from key stakeholder and the wider community to enable Government and responsible Ministers to make informed decisions.

There may be uncertainty and various risks associated with an option that is superior to the proposed regulatory option, or there may be considerable difficulties in quantifying most of the costs and benefits for most options.

It is important that Government and Ministers are provided with an honest appraisal of the costs and benefits

3.6. Consultation

Consultation with affected groups is integral to regulation impact analysis (RIA). Effective consultation is commenced early and preferably prior to the commencement of the RIA.

Effective consultation engages affected groups to contribute to policy development. This includes providing information and data to help the responsible department to define the extent and causes of the problem, measure the likely compliance costs, analyze the impact of any restrictions on competition and to identify feasible alternatives.

Document the consultation undertaken by identifying the groups, firms, government agencies and individuals that have participated in the consultation process.

It is important to acknowledge the contribution of any stakeholder by disclosing the information and data that helped to inform the analysis of the problem.

Similarly, it is important to acknowledge stakeholders that have provided compliance cost estimates that have been used in the assessment of the proposed regulation.

Document the views of groups affected by the proposed regulation and any evidence provided to support those views.

A response and the reasons for not accepting a particular view of a key affected group should be provided. For example, the XYZ industry federation raised concerns that the proposed regulation would impose significant compliance costs on its members.

In response to these concerns, the department held meetings with the XYZ industry federation and agreed to meet with a representative sample of its members to identify and measure the likely compliance costs. Meetings were held at the business premises of 12 selected firms where each firm provided information on the type of personnel and processes required, the likely time required and the associated costs involved with compliance of the proposed regulation. The average compliance cost was calculated at 6 baht per unit of production and represented about 0.8% of the cost of production.

With this new information, the XYZ industry federation reconsidered its submission and agreed that the compliance costs would not impose a significant burden on its members. The XYZ industry federation also agreed to notify members in its next newsletter the outcomes of the compliance study.

This provides a clear demonstration that matters raised in submissions have been considered, and contributes to the transparency of the regulatory process. This helps to build trust within the community that government is inclusive and gives consideration to matters raised and makes appropriate adjustments to the analysis and/or the design of the proposed regulations.

3.7. Proposed Regulations

A copy of the proposed regulations should be attached at the end of the RIA to enable key stakeholders and the wider community to comment on the scale and scope of the regulations.

5. COST BENEFIT ANALYSIS

Rationale for using cost benefit analysis as the preferred method for regulatory analysis

Regulation has positive (benefits) and negative (costs) impacts. Usually, the group that incurs the cost is different to the group that receives the benefits of the regulation. For example, motor car trader regulation imposes costs on motor car traders to be licensed and to provide warranty and disclosure requirements so that consumers are protected from faulty vehicles and can make informed decisions. Provided the benefits are greater than the costs, the regulation is deemed to have provided a net benefit to society.

However, there is an opportunity cost attached with every regulation. The opportunity cost imposed on businesses and consumers is the resources that could be allocated to other uses in the absence of regulation. Using the above example, suppose the total cost to business associated with motor car trader regulation is $10 million, then the opportunity cost to motor car traders is the foregone opportunity to have allocated the $10 million to other uses. Lets suppose that most of the $10 million cost is attributed to management and staff time complying with disclosure requirements. Lets also suppose that motor car traders spend two hours on compliance work rather than two hours on revenue generating activities: selling vehicles or providing after-sales services. The two hours expended on regulatory compliance represents the opportunity cost to motor car traders: potential foregone revenue income from their business activity. In real simple terms, they could have sold a vehicle to a customer, but were instead sitting at the desk doing compliance paperwork.

The opportunity cost of regulation involves society giving up something in order to achieve a regulatory objective and the associated benefits. For most regulations, a specific business group incurs the regulatory costs so that society can benefit from safety, environment, consumer protection and so forth.

If the opportunity cost across the total stock of regulations is significant, the cost to business can result in lower productivity, higher production costs and less competitiveness. This can ultimately affect investment and employment opportunities.

Given that regulation has positive (benefits) and negative (costs) impacts and there is an opportunity cost associated with regulation, it is important to evaluate the costs to all parties and to ensure the total benefits are in excess of the total costs that are imposed.

This is the rationale for using cost benefit analysis as the primary tool to undertake regulatory analysis. Cost benefit analysis calculates the total costs and compares these costs with the total benefits. A qualitative assessment of benefits (and sometimes costs) is still an important component of the cost benefit analysis. It allows the identification and discussion of direct and intangible benefits to be considered and possibly weighted in a partial cost benefit analysis assessment. Importantly, the cost benefit analysis facilitates informed decision-making on the best available data. For example, a partial cost benefit analysis needs to provide the cost and benefit outcome (net cost or net benefit) for those components that could be monetized and discuss whether the non-monetized benefits and costs are material enough to make a significant difference on the monetized analysis. Even if this discussion concludes that the proposed regulation is likely to generate a net benefit after considering monetized and non-monetized costs and benefits, there is still a need to consider the probability of the regulation achieving the policy objective and whether the benefits of the proposed regulation are significant compared with other problems where the government may have reason to regulate and deliver greater benefits to society.

An analysis of the average compliance cost per affected business is also important information to the decision-maker. For example, two different regulatory analyses reveal the following compliance costs. In one regulatory analysis, the business compliance cost is $50 per annum and the second regulatory analysis, the business compliance cost is $10 per unit that represents and 8% cost increase per unit. Even where the benefits cannot be monetized, a reasonable decision-maker would not consider the $50 per annum a huge impost on business. But a $10 per unit compliance cost that led to an 8% cost increase is likely to concern the decision-maker in terms of whether the flow-on effect on consumer prices and impacts on business competitiveness is worth the introduction of the regulation, particularly if the benefits to society appear somewhat small relative to other comparable regulatory matters. Even if the decision-maker requested his/her department to undertake further policy work to ascertain whether there was a lower cost alternative, the objective of the cost benefit analysis has been achieved. It has facilitated informed decision-making. In this case, the decision-maker has decided the opportunity cost to business and consumers appears, prima facie, too great to achieve the policy objective, and wants a fuller exploration of alternative compliance approaches that can deliver a lower compliance cost.

Notwithstanding the difficulties of quantifying benefits, cost benefit analysis is the only analytical framework that evaluates the costs and benefits to all parties. Cost benefit analysis is not a precise tool but should be seen as a conceptual framework to identifying all of the positive and negative impacts of a regulation and alternative approaches.

Cost Benefit Analysis Framework

Cost benefit analysis facilitates informed decision-making. A cost–benefit analysis should assess the costs and benefits of the regulation and the viable options. In most cases, it provides evidence that the benefits of government intervention outweigh the costs and identifies the option that provides the greatest net benefit to society. In some cases, the cost benefit analysis will also reveal that none of the options provide a net benefit to society and that government intervention is not warranted.

The full range of costs and benefits need to be identified and where possible quantified.

There are four stages to cost benefit analysis:

- Identify the groups affected by the regulation
- Identify the type of costs and benefits
- Assessment of the costs and benefits
- Decision criteria

Identify the groups affected

During the policy development stage and/or the drafting of the proposed regulations, the affected groups will need to be identified for the purposes of evaluating the costs and benefits. The key affected groups will include those persons, businesses, organizations, groups and industry sectors that will need to comply with the regulation and the beneficiaries will invariably be those parties that receive the goods or services from the regulated party. These parties could be consumers and other businesses for industry specific regulation, and in the case of generic regulation such as environmental regulation, the beneficiaries would be the general public.

Type of costs and benefits

There are various costs and benefits that need to be considered in a regulatory analysis:

- direct and indirect cost and benefits
- intangible costs and benefits

Direct costs and benefits are closely related to the policy objective of the proposed regulation and the indirect costs and benefits are by-products of the proposed regulation.

Direct costs include compliance costs to those parties that need to comply with the proposed regulation and the administration costs incurred by Government in enforcing the proposed regulations.

Indirect costs comprise social and environmental costs to the community and economy-wide impacts such as a reduction in employment.

Tangible cost and benefits by definition can be valued and involve an explicit market price.

Intangible costs and benefits do not have a market price and a market variable needs to be found to approximate their value. Common intangible costs and benefits include positive and negative impacts on the environment.

The nature of the proposed regulation will determine which of these costs will need to be evaluated. At a minimum, the direct costs and benefits would need to be evaluated.

Assessment of the Costs and Benefits

Direct Costs

Generally, the direct costs of a regulation can be quantified. Each part of a regulation that imposes an obligation on a person, business or organization to comply with a specific provision imposes a direct cost.

Each regulatory clause should be appraised to determine whether it is likely to impose a cost and to identify the person, business, organization, group or industry sector that will incur the direct costs.

Several pieces of data are required to calculate the direct cost. These normally include the compliance time involved and the associated labor cost and the compliance frequency (one-off or periodic).

This calculation should be undertaken on a transaction basis and on an aggregated basis for the expected total transactions across the affected group.

The example below is taken from the RIA for the Motor Car Traders Regulations 2008. The example details a regulatory obligation, compliance time involved, labor cost and the total transactions. With this information, calculations are undertaken for the transaction compliance cost, the annual compliance cost to the industry and the present value (discounted) compliance cost to the industry.

Box 1: Motor Car Traders Regulations 2008 RIA

Regulatory obligation

The regulations require motor car traders to record information in a dealings book about the acquisitions and disposals of motor vehicles. The information includes vehicle identification number, odometer reading, name and address of owner or buyer, security interest (if any) and road worthiness certificate.

Compliance time involved

On-site consultation with motor car traders and observance of the compliance task revealed that the time involved for recording details about a motor vehicle acquisition was about 45 minutes and for the disposal of a motor vehicle about 15 minutes.

Labor Cost

To calculate the labor cost associated with the compliance time involved with a regulatory obligation, we need to establish the hourly rate. In the absence of any industry data on hourly rates paid to personnel involved in this compliance task, the analysis has drawn upon the Australian Bureau of Statistics (ABS) private sector average weekly earnings.

The ABS average weekly earnings are stated at $1,083.29. This is multiplied by 52 weeks to obtain an annual salary of $56,331

The total number of weeks worked per annum needs to exclude annual and public holidays and sick leave entitlements. This equates to 44 weeks per annum and is multiplied by number of hours worked each week (41 hours per week). This equates to 1804 hours per annum.

The $56,331 annual salary is divided by 1804 hours per annum. This equates to an hourly rate of $31.23.

The $31.23 hourly rate needs to be augmented with any wage oncosts (payroll tax, workers compensation premiums, superannuation charges) and business overhead costs to establish the actual hourly rate.

The standard salary oncosts is calculated at 16.5% and 50% for overheads. The $31.23 is multiplied by 1.165 and 1.5 and equates to $54.57 and rounded to $55.

The workings and formula used to calculate the hourly rate is provided below.

ABS Average Weekly Earnings - $1083.29 multiplied by 52 weeks
= $56,311 per annum

Number of weeks worked per annum
52 weeks minus 4 weeks (annual holidays) minus 2 weeks (public holidays) minus 2 weeks (sick leave)
= 44 weeks

Average weekly hours for full-time workers
= 41 hours

On cost multiplier (payroll tax, workers compensation, superannuation)
= 1.165

Overhead cost multiplier (rent, building and land rates, insurance and other corporate overheads)
= 1.5

$$= \frac{\$56,331}{44 \times 41} \times 1.165 \times 1.5$$

$$= \frac{\$56,331}{1,804 \text{ hours per annum}}$$

= $31.23 x 1.165 x 1.5

= $54.57

This has been rounded up to $55 for the purposes of making the calculations below.

Total transactions

To ascertain the total cost to the motor car trader industry, we need to know the total number of motor vehicle sales for both new and used vehicles. In this case, the Australian Bureau of Statistics collects data on annual motor vehicle sales.

There are 250,000 new car sales per annum and motor car traders would need to record the acquisition from the manufacturer or importer/distributor and the disposal to consumers (500,000 entries in the dealings book).

There are about 450,000 used motor car sales per annum and motor car traders would need to record the acquisition from the seller and the disposal to the buyer. Hence, a total of 900,000 entries would need to be in the dealings book across the industry.

As a result, a total of about 1,400,000 entries (500,000 new car sales and 900,000 used car sales) would be recorded in motor car traders' dealings books across the industry.

For the purposes of calculating the compliance cost, there are 700,000 acquisitions (250,000 new cars and 450,000 used cars) and 700,000 disposals (250,000 new cars and 450,000 used cars).

Calculations

Transaction compliance cost

With the above information, we can now calculate the compliance cost per sales transaction for each acquisition and disposal.

Per Acquisition transaction: $55 per hour (labor cost) divided by 45 minutes = $41.25

Per Disposal transaction: $55 per hour (labor cost) divided by 15 minutes = $13.75

Annual Compliance Cost

With the per transaction cost, we can now calculate the total compliance cost for the 1.4 million transactions across the industry.

700,000 acquisition transactions multiplied by $41.25 = $28,875,000
700,000 disposal transactions multiplied by $13.75 = $9,625,000
Total annual compliance cost: $38.5 million

Present Value Cost

The motor car trader regulations have a life of ten years and the costs have been discounted by 3.5% over this time period. The $38.5 million annual compliance cost over ten years equates to $385 million (undiscounted) and a present value of $320 million (discounted).

The above analysis provides two useful outcomes. Firstly, it provides an estimation of the costs on an individual transaction basis. This enables consideration of whether the compliance burden is reasonable taking into account the purpose of the regulation and whether it is likely to have a significant impact on the business or be passed onto the purchaser. In this case, the $55 cost is considered a relatively small compliance cost relative to the retail price of most motor vehicles and to the gross profit margin on a motor vehicle.

Secondly, the analysis provides the total cost in respect to this specific provision on dealings book over the life of the regulations.

This is a basic example of compliance cost calculation. Other regulations may require the calculation of costs associated with equipment and materials used as part of the compliance and/or specialist external assistance (for example, legal or accounting advice). The same methodology as used in the above example would be applied for these extensive compliance requirements.

The methodology can also be used to calculate government costs to administer regulation such as the time involved in processing and approving applications for a licence, permit, registration etc the renewal of the aforesaid, inspections and audits. The actual salaries paid to government agency personnel would be used rather than average weekly earnings.

To recap, the compliance time involved is critical and should be obtained from affected stakeholders that need to comply with the regulation. Private sector average weekly earnings should be used in the absence of reliable industry wages data and industry or government statistical data should be used to determine the total number of transactions.

Direct Benefits

A qualitative assessment of the direct benefits was undertaken as the several government agencies that access a motor car traders' dealings book had no data. The following qualitative assessment was provided ass shown in Box 2.

Box 2: Qualitative assessment of the benefits

The proposed regulation will enable Consumer Affairs Victoria to undertake routine inspections and investigations into consumer complaints, and the Motor Car Traders Guarantee Fund to assess and pay claims to consumers; both organizations are reliant on the prescribed vehicle identification information to match the motor vehicle with the motor car trader and the buyer during a contractual dispute. Similarly, Victoria Police and VicRoads rely on the prescribed vehicle identification in the dealings book to trace and match stolen vehicles being sold at a

motor car trader's premises and to ensure motor vehicles are roadworthy and transfer of clear title respectively.

As most of the information recorded in the dealings book would be undertaken by a motor car trader for stock control purposes, the only feasible alternative considered was a variation to the prescribed requirements involving less information as shown in Box 3 below.

Box 3: Alternative - Less Information Prescribed

An alternative is to prescribe less information than in the proposed regulation. However, most motor car traders would still keep records regarding vehicle identification for stock record purposes and enquire into whether there is any security interest in a trade-in motor vehicle and amounts to be paid out on discharge as this would be in their financial interests to ensure that they did not incur any potential financial liability prior to the sale of the trade-in motor vehicle.

The regulation and the alternative were compared. However, as the qualitative assessment of the alternative and the absence of quantified benefits required the assistance of another decision-making in the form of multi-criteria analysis – a balanced score card approach. Box 4 below shows the application of multi-criteria analysis for assessing the regulation and the alternative.

Box 4: Multi-criteria analysis

Not all of the benefits can be quantified and a net present value cannot be calculated. Accordingly, the multi-criteria analysis approach has been adopted to compare the net impacts of the alternatives.

In this analysis, the criteria are:

- Increased consumer protection (75 per cent);
- Reduced costs to business (15 per cent); and
- Reduced costs to Government (10 percent).

These criteria have been selected on the basis that they reflect the key costs and benefits detailed in the alternatives.

Weightings are assigned to each of the criteria reflecting their relative importance to the objectives of consumer protection and economic efficiency.
For each alternative, a qualitative score is assigned to each of the criteria, depending on the impact of the alternative on the criteria. Scores are assigned relative to the base case –either -5 if the impact is negative/undesirable/poor and +5 if there is a positive/desirable/good impact.

The following options are assessed in the Table below:

Base Case – information prescribed by the Act i.e motor car traders to determine the content of a dealings book for acquisitions and disposals of motor vehicles.

Information prescribed in the proposed regulations – same as the Act but prescribed entry requirements for the acquisition and disposal of motor vehicles.

Less information prescribed – enables the removal of some unspecified entry requirements for the dealings book.

Table: Assessment of net impacts of alternatives

Criteria		Base Case		Proposed Regulation		Less Information	
Criteria	Weighting	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Increased consumer protection	0.75	0	0	+5	3.75	+3	2.25
Reduced cost to business	0.15	0	0	-5	-0.75	-3	-0.45
Reduced costs to government	0.10	0	0	+5	0.50	+3	0.50
Total Score		**0**	**0**		**3.50**		**2.10**

Under the increased consumer protection criterion, information prescribed in the proposed regulation receives a score of +5 as it covers the critical aspects that need to be included in the dealings book. A score of +3 score is allocated to the less information prescribed option as motor car traders would still maintain most of the information prescribed in the dealings book as the data collected is considered normal business practice but some motor car traders could omit critical information such as odometer readings. Accordingly, the less information prescribed option would still provide increased consumer protection but not to the full extent as scored in the information prescribed in the proposed regulation.

Under reduced costs to business, the information prescribed in the proposed regulation receives a -5 score given the compliance costs incurred (notwithstanding that some costs would be incurred as part of normal business practice) and less information prescribed receives a -3 score given that some businesses could choose to collect less data.

Under the reduced costs to Government criterion, information prescribed in the proposed regulation receives a +5 score as it provides certainty about the type of information collected by motor car traders. The less information prescribed option receives a +3 score given that motor car traders would as part of their normal business practice still collect most of the information prescribed in the proposed regulation.

The multi-criteria analysis suggests that the most attractive alternative is the information prescribed in the proposed regulation as this gives assurance that motor car traders do collect all the necessary information for the acquisition and disposal of motor vehicles.

How to quantify the benefits when no data is available on the problem

If the analysis of the nature and extent of the problem has not providing supporting evidence on the costs associated with the problem, it will be difficult to quantify the benefits of a proposed regulation and the alternatives.

In these cases, it is worthwhile undertaking comparative research to ascertain whether other countries have conducted empirical analyzes that can adjusted for the local situation in Thailand.

For example, the Victorian State Government in Australia, recently reviewed its safe drinking water regulations. These regulations prescribe mandatory drinking water standards, water quality and the frequency of sampling that must be undertaken by water authorities. The policy objective of the regulations is to protect public health. The regulations have been highly effective

in preventing the outbreak of waterborne diseases. Accordingly, the RIA was unable to provide data on the size of the problem (cases of deaths and hospitalizations and the associated costs).

In this regard, quantifying the benefits in the absence of the regulations is difficult without appropriate data. The Department of Health searched for empirical data from other countries where there had been outbreaks of water-borne diseases (USA, Canada and Sweden) and applied these findings to its analysis to the local situation in Victoria. As shown in Box 5 below, the Department of Health was able to estimate the incremental benefits that would arise from protecting public health from preventing these outbreaks of water-borne diseases.

Box 5: Safe Drinking Water Regulations 2015, Victoria, Australia

Quantifiable incremental benefits

The estimation of quantifiable benefits in this RIA is based on incremental cost savings arising from protection of public health in the form of reducing the risk of gastroenteritis outbreaks/cases.

In order to establish the incremental benefits under the options the following health and mortality cost assumptions have been made:

The societal cost of an epidemic outbreak would be $163.64 per person in 1995 prices, based on a Monash University and ANU report on an outbreak on a town of 11,000 people (Department of Epidemiology et al 1997). This is equivalent to $267.84 per person in 2014 prices.

The cost of a death to society is based on a value of a statistical life (VSL), which represents how much society is willing to pay to reduce the risk of death. The VSL estimate demonstrates the financial value society places on reducing the average number of deaths by one and is given as $3.5 million in 2007 (OBPR 2008). This is equivalent to $4,216,724 in 2014 prices.

Potential health costs of an outbreak

Case studies from similar (developed) countries with inadequate water quality regulations and monitoring help to provide the magnitude of what could potentially happen with an outbreak. The following specific outbreaks in Milwaukee, Östersund and Walkerton are used as examples where people became ill or died.

These cases of specific outbreaks are summarized in the Table below. The average number of people becoming ill with IID (infections intestinal disease) in an outbreak is around 144,100 with around 39.31% of the total population affected on average. The risk of death is more prevalent in those with suppressed immune systems.

Country/location	Study	Year	Population affected by IID	Pathogen behind outbreak	Population affected as % of total population	Deaths	No of deaths as a % of those affected
USA/Milwaukee	Mackenzie et al 1994	1993	403,000	*Crytosporidium*	25.00%	69	0.017%
Canada/Walkerton	Salvadori et al 2009	2000	2,300	*Campylobacter jejuni*	47.92%	7	0.304%

Sweden/Östersund	Widerstrom et al 2014	2010	27,000	*Crytosporidium*	45.00%	0	0.00%
Average			144,100		39.31%	25	0.107%

Estimated costs of a Milwaukee-type scenario in a Victoria context

In the Milwaukee 1993 outbreak, where Crytosporidium had contaminated the city's public water supply, approximately 64 people or 93% of the 69 deaths in 1993 involved people with AIDS. Another waterborne outbreak in 1994 in Las Vegas, Nevada led to the deaths of 41 AIDS patients (Goldstein et al 1996). This is used to consider the impacts on people with compromised immune systems.

In order to estimate the cost of mortality during an outbreak in a Victorian setting the following assumptions are made:

- The population served by the largest water supplier in Victoria is estimated to be 1.74 million and represents 30.97% of the total population of an estimated 5.62 million.
- In 2011 the number of AIDS patients in Victoria was 2,282.
- AIDS patients who died in Milwaukee in 1993 (64) as a proportion of total population of AIDS patients in 1995 (653) is estimated to be 9.8%.
- The total population of AIDS patients in Victoria affected by an outbreak is estimated to be 69 (2,282 x 30.97% x 9.8% = 69).
- The probability of an outbreak occurring is 1.75%.
- The estimated number of mortalities from a waterborne outbreak is 1.22 (69 x 1.75%)
- The VSL as at June 2014 is estimated to be $4,216,724.

The cost of mortality during an outbreak in Victoria is therefore estimated to be $4,216,724 x 1.22 mortalities = $5.12 million or 4.21 million in 2014 present value dollars.

Decision Criteria

Net present value

Where a full cost benefit analysis has been undertaken, the future costs and benefits need to be discounted to determine the net present value. The net present value must be positive i.e NPV > 0 in order for the proposed regulation to meet the acceptance criteria. The formula and an example are provided in Box 6 below.

Box 6: Net present value formula

To determine the net present value (NPV) of an option, the costs and benefits need to be quantified for the expected duration of the proposal.

The net present value is calculated as:

$$\sum_{t=0}^{T} NPV = (Bt-Ct)/(1+r)t$$

where Bt = the benefit at time t
Ct = the cost at time t
r = the discount rate
t = the year
T = number of years over which the future costs or benefits are expected to occur (the current year being year o)

Consider an option that will require industry to install new equipment to limit air pollution. The equipment costs $5 million to install and will operate for the following four years. Ongoing (annual maintenance) costs to business are $1 million a year (in constant prices). The benefits are estimated at $3 million a year (in constant prices). The discount rates are 3 per cent and 5 per cent.

	Costs	Benefits	Annual net benefit	Net present value	
	(Ct)	(Bt)	(Bt-Ct)	3%	5%
	$m	$m	$m	$m	$m
Year 0	5		-5	-5.00	-5.00
Year 1	1	3	2	1.94	1.90
Year 2	1	3	2	1.89	1.81
Year 3	1	3	2	1.83	1.73
Year 4	1	3	2	1.78	1.65
Net present value				2.44	2.09

Source: Best Practice Regulation Handbook (2010) Australian Government

Other decision-making tool to use in the absence of a full cost-benefit analysis

A full cost-benefit analysis (CBA) represents best practice in evaluating the impact of viable policy options as it gives decision-makers a strong basis for comparing policy alternatives on the basis of quantifiable (monetary) costs and benefits.

When the benefits (and in some cases the costs) of the policy options being considered cannot be sufficiently or confidently quantified and monetized, a partial cost benefit analysis should still be undertaken with supplementary decision-making tools to assist in comparing or ranking options. These include:

- _break-even analysis;
- _cost-effectiveness analysis; and
- _multi-criteria analysis.

These decision-making tools should not be used as a substitute for cost-benefit analysis but as an aid to improve a partial cost benefit analysis.

Break-even analysis

Break-even analysis is useful where the benefits can be monetized but there is a degree of uncertainty of whether the benefits are likely to be accrued. This requires estimating the benefits needed to offset the estimated costs. Box 7 below provides an example of the use of break-even analysis.

Box 7: Example of Break-even analysis

A hypothetical proposal is expected to improve safety by reducing fatalities and preventing injuries and the cost of the proposal can be estimated with reasonable certainty. While there are widely used estimates of the value of a statistical life (VSL)(assumed here to be $4 million) and the value of avoided injuries, in terms of hospitalization costs and lost productivity (assumed here to be $250,000 per injury0, there may be no way of confidently and accurately quantifying how many lives will be saved and injuries will be avoided from the proposal.

It is possible to use this available information to determine how many fatalities/injuries would need to be avoided in order to justify the costs of the proposal, that is for the proposal to 'break-even'. Various combinations of fatalities and injuries prevented would see the proposal break-even. For example, if the total cost of implementing and complying with the proposal is $13 million per annum, the proposal would need to prevent three fatalities and four injuries each year to break-even, using a VSL of $4 million and the cost of injuries of $250,000. Similarly, preventing 2 fatalities and 20 injuries would also allow the proposal to break even.

Judgment needs to be exercised to determine whether such a proposal would achieve the magnitude of benefits required to break-even given the nature and size of the policy problem (e.g does the proposal target a small element of the problem?) and the expected practical effect of the proposal (e.g what is the intervention logic and what behaviors/activities are expected to change?).

In this example, if the current level of fatalities is 2 and the current level of injuries is 3, then the break-even won't be achieved. If the current level of fatalities is instead 30 and injuries is 100, then it is more likely to be achieved. In the latter case, the judgment as to whether the break-even points is feasible should be supported by objective data, for example based on historical time-series incident data and the counterfactual/baseline, overseas experience, the safety-related outcomes experienced from a similar policy proposal, or academic research.

Source: Victorian Guide to Regulation (2011), Department of Treasury & Finance, Victorian Government.

Cost effectiveness analysis

Cost-effectiveness analysis is used where the benefits cannot be monetized. It compares alternatives on the basis of the ratio of their costs and a single quantified measure such as lives saved. Box 8 provides an example of how to undertake cost effectiveness analysis. It is a relatively simple calculation.

However, cost effectiveness should be used prudently as it does not address the actual benefits (that is, the costs associated with the nature and extent of the problem). Without this information, it is entirely possible that the Option that provides a higher unit cost may in fact have a higher probability of saving lives. This would occur where the option that has the lowest unit cost does not address the primary causes of the actual problem (road fatalities) but has been assumed that this option will address a primary cause of road fatalities.

Box 8: Example of Cost Effectiveness Analysis

Two policy options are aimed at reducing road fatalities. Option A costs $20 million and would save 10 lives and Option B costs $15 million and would save 5 lives. The cost for each life saved is calculated by dividing the cost by the number of lives saved ($20 million divided by 10 lives = $2 million)

Option	A	B
Cost	$20 million	$15 million
Lives saved	10	5
Cost for each life saved	$2 million	$3 million

The analysis shows Option A has the highest cost but has the lowest unit cost in

saving lives, $2 million compared with $3 million in Option B. This would suggest that Option A is the preferred option.

Multi-criteria analysis

Multi-criteria analysis (MCA) can be a useful tool when it is difficult to quantify the impacts, particularly the benefits of a regulation and alternative approaches.

MCA is a balanced score card approach and requires judgments about how proposed options will contribute to a series of criteria that are chosen to reflect the costs and benefits associated with the proposals. The criteria should be consistent with the stated policy objectives for the proposal and weighting according to their relative importance to the final decision.

A qualitative score would be assigned, depending on the impact of the option on each of the criteria measured relative to the base case (i.e in the absence of regulation). A criterion rating scale from -10 to 10 is preferred as it is easier to include more information on the choices made, and this results in a greater understanding of the proposal. For example a score of 10 would indicate that the option has twice the impact of an option with a score of 5 (and five times the impact of an option with a score of 2 etc). For example, if one option incurred costs of $3.5 million per year, and another option $7 million, then the former option might receive a rating of - 5, while the latter would score -10. The score in this case would be negative as the costs incurred are relative to the base case where no costs are incurred in the absence of regulation.

Box 9 below provides an example of how to use multi-criteria analysis. The weighted scores are calculated by multiplying the score by the criterion weighting. For example in Box 9, the weighted score for Option 1 in respect to a reduction in road-related accidents is +4 and is calculated by multiplying the score of +10 by the criterion weighting (40%). The total score for each option is the sum of the weighted scores for each criterion.

Box 9: Example of Multi-Criteria Analysis (MCA)

To achieve a reduction in road related accidents, two options may be considered and evaluated based on the following simplified multi-criteria analysis, with the assignment of scores ranging from -10 for negative outcomes to +10 for positive outcomes relative to the base case. (Outcomes that maintain the status quo would receive a score of zero).

		Base case		Option 1		Option 2	
Criteria	Weighting	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Reduction in road –related accidents	40%	0	0	+10	+4	+5	+2
Costs of compliance	50%	0	0	-5	-2.5	-3	-1.5

and administration							
Improved traffic flow	10%	0	0	0	0	-10	-1
Total		0	0		+1.5		-0.5

The assigned scores indicate that Option 1 is considered to reduce road-related accidents by twice as much as Option 2. Meanwhile, the compliance and administrative costs of Option 1 are higher than for Option 2. Option 1 has no expected impact on traffic flow.

In this example, Option 1 is the preferred approach because it yields a positive score of +1.5. Option 2, on the other hand, returns a negative result of -0.5 and would therefore be considered to be an undesirable proposal.

When presenting the results of MCA in a RIA, it is important tot provide sufficient commentary to explain the approach, particularly in terms of providing justification for the choice of criteria, the weightings of the criteria, and the scores assigned to the different options for each of the criterion.

Source: Source: Victorian Guide to Regulation (2011), Department of Treasury & Finance, Victorian Government.

Expected Quality of RIA Cost Benefit Analysis

In the early years of RIA adoption in Thailand, the skill and experience of government agency officers will restrict their ability to undertake sophisticated cost benefit analysis. Even where officers have the skill-set, the absence of robust data will prevent the use of more sophisticated analyzes.

With the improvement of data collection strategies over time, government agencies will be in a position to undertake full cost benefit analysis and employ sophisticated methodologies and analyzes.
In the interim, it is expected that at a minimum, the cost benefit analysis should cover the following:

- Where the proposed regulation imposes a direct cost (obligation to comply) on a person, business, organization, group or industry sector, the direct costs (compliance costs) are assessed.

- Where the costs and benefits of the alternatives cannot be quantified, a qualitative assessment should be undertaken.

- The cost to government in administering and enforcing the proposed regulation should be also assessed using a similar methodology to the direct costs.

- Where the benefits of the proposed regulation cannot be quantified, a qualitative assessment of the benefits should be undertaken including an analysis of the likely size of the benefit with some consideration of the weight of each benefit. It will be particularly useful to draw upon comparable RIAs from other OECD and APEC countries where they have been able to quantify the benefits and to adjust these quantified benefits to local conditions in Thailand.

- The use of other decision-making tools such as break-even analysis, cost effectiveness and multi-criteria analysis should be used where a full cost benefit analysis has not been able to be undertaken.

This minimum standard is a significant improvement compared to what existed prior to the introduction of these Guidelines. Importantly, a RIA produced using the minimum standard will enable informed decision-making by government. In particular, it should provide a clear indication of the compliance cost to directly affected stakeholders and the cost to government to administer and enforce the regulations.

Where the costs associated with the problem cannot be quantified and hence the potential benefits cannot be quantified, the RIA also provides important decision-making information that the government department does not have a good understanding of the problem, and in some cases, any surety that the proposed regulation or other options are likely to achieve the policy objective and deliver a net benefit to society.

In these cases, the cost benefit analysis in the RIA enables the decision-maker to err on the side of caution and request that further research is required on the size of the problem, the associated costs and the likely benefits that would be delivered before making a commitment to introduce the regulation. Such an outcome is probable where the cost benefit analysis has revealed significant direct costs to affected stakeholders that could affect the cost of goods and services to consumers and/or business competitiveness, investment and employment opportunities. Another issue of concern may be where the cost benefit analysis reveals significant budgetary costs to Government in administering and enforcing the regulation. Once again, the decision-maker may want further research and evidence that the policy objective can be achieved with a net benefit to society.

Accordingly, the absence of quantification of the benefits should facilitate over time improvements to the quality of data collection strategies within government so that full cost benefit analysis can be undertaken.

6. Regulatory Impact Analysis Template

REGULATORY IMPACT ANALYSIS TEMPLATE	
Regulation Title	
Ministry or Regulatory Body	
Executive Summary	
Notice for Submissions	
Section 1: Identification of the Problem Who is affected by the problem? What is the scope and scale of the problem? Is the identified problem part of a larger problem? If so, what is the size of the identified problem relative to the larger problem? Is there sufficient empirical evidence that a problem exists? Is the extent of the problem identified or is its identification based on anecdotal evidence? What is the cause of the problem? What are the economic, social and environmental costs of the problem? Does the problem exist currently, or is it merely anticipated? Is the problem a minor irritant or a significant hazard? Are there any technological, economic, political, administrative, social and/or environmental constraints that are relevant to the problem? Are there existing regulations that could deal with the problem? If yes, why are these regulations inadequate? What are the consequences of not taking any action? Could relying on the market in conjunction with the general application of existing laws and regulations solve the problem? If not, why not? What is the experience in other jurisdictions with different regulatory frameworks? What is the scope and scale of the problem in unregulated jurisdictions? Has the scope and scale of the problem increased/decreased in unregulated jurisdictions due to market, technological, regulatory or environmental changes?	

Section 2: Objectives What are the policy objectives?

Section 3: Options What are the possible regulatory and non-regulatory options that meet the policy objective and solve the problem? Depending on the option, the following questions may need to be considered and discussed: How would the alternative work? What role does government have? Is there sufficient commonality of interest, within an industry or professional association to ensure high levels of voluntary compliance? How will consumer interests be represented? Does the alternative discriminate against persons/groups/industries? Is the alternative legally feasible? Does the alternative restrict competition? What monitoring will be required and how would monitoring occur? Is the alternative likely to be enforceable? Will non-compliance be evident?

Section 4: Assessment of Options Steps in preparing a full cost benefit analysis: 1.Specify the set of options 2. Decide whose costs and benefits count 3.Identify the impacts and select measurement indicators. 4. Predict the impacts over the life of the regulatory proposal 5. Monetize (attach baht values to) impacts 6. Discount costs and benefits to obtain present values 7. Compute the net present value of each option 8. Perform sensitivity analysis (different range of discount rates) 9.Conclusion (comparative analysis of the options) Partial cost benefit analysis: Where a full cost benefit analysis cannot be undertaken (mostly due to some or all of the benefits not being able to be monetized), the costs of each option should still be monetized and complemented with other decision-making criteria such as cost effectiveness or multi-criteria analysis. For full and partial cost benefit analysis, disclose any assumptions that have been used for monetizing/quantifying costs and benefits, and the basis for those assumptions. The analysis should make transparent to the reader how cost and benefit values have been calculated. For complex calculations, it may be useful to include this information in an appendix.
Section 5: Consultation
Section 6: References
Section 7: Appendices
Section 8: Proposed Regulation

7. Case Study

Each reader will interpret the expected level of analysis required for the key parts of a RIA differently. This will lead to varying levels of quality RIA. To obviate this, these Guidelines show how to apply the key parts of a RIA to an actual case study to demonstrate the level of analysis and the critical thinking required to prepare a robust and high quality RIA.

The case study relates to the problem of road traffic fatalities and injuries in Thailand; specifically the government decision to ban children less than six years of age from being transported on a motorcycle.

It should be noted that the use of different types of data sets (fatalities and injuries, population, costs associated with fatalities and injuries, cost inputs such as average monthly wages, fares for alternative modes of transport, etc) that are used together to make calculations in the assessment of costs associated with the problem and the assessment of the costs and benefits for the regulatory proposal and alternatives, should cover the same period of time to ensure accuracy. Otherwise, the calculations could under-state or overstate the costs and benefits.

For the purposes of this case study, most of the different data sets are for 2010. However, other data sets are from different years and this affects the accuracy of the costs and benefits. The reader should not be overly concerned with this issue but focus on the level of analysis and the critical thinking that has been used to develop the RIA.

Key points

Road fatalities and injuries are a significant problem in Thailand. A number of organizations have campaigned to save children from being killed and injured whilst being transported on a motorcycle. Some of these organizations claim several thousand fatalities associated with this activity. It is important to verify the extent of the problem.

The case study also demonstrates the need to analyze the size of the problem relative to the affected population. A risk analysis reveals the probability of a child fatality and injury relative to the size of the child population and also motorcycle usage based on vehicle kilometers traveled per annum. This information is important for Government in weighing up whether the allocation of scarce resources within the economy should be applied to this problem or to another part of the road fatality and injury problem that may provide greater benefits to improving road safety.

The cost benefit analysis requires analysis of the incremental costs and benefits. That is, the additional costs and benefits incurred in the absence of regulation. Quantifying the costs of behavioral regulation can be challenging. In this case, it is important to think about the reasons an affected group uses a motorcycle. In this case, parents use a motorcycle to transport their child with them to go

shopping, work (in some cases), pre-school, health centres, visiting relatives and friends, recreation, religious etc.

The cost of a ban is not just the restriction on the freedom of parents dependent on motorcycles to transport their young children to these activities.

How many children and parents or family members will need to use alternative modes of transport?

While it is likely to be difficult to obtain data on the extent of young children being transported on a motorcycle, consideration needs to be given to an activity where the parent has no choice but to use an alternative mode of transport. For example, most children from 3 to 5 years of age attend pre-school.

How many children attend pre-school? How many parents are dependent on a motorcycle as their primary mode of transport? How will parents send their children to pre-school if they cannot use a motorcycle? Is their home within walking distance of the pre-school centre? Or do they need to take a bus or minivan, or a taxi?

Will it take longer to walk to a pre-school centre compared with a motorcycle? What is the average time difference between these two modes? What is the opportunity cost (potential income forgone) of the parent or other family member that may have to spend more time walking to a pre-school or a bus stop compared to when they traveled on a motorcycle?

What is the average operating cost of a motorcycle? Is this higher or lower than the cost of a fare for a bus or taxi? The difference in costs between motorcycles and alternative modes of transport is the incremental cost in the absence of regulation (ban).

How will a ban affect motorcycle taxis? Are there likely to be impacts on revenue and employment?

Are there any unintended consequences of a ban?

Does walking on sidewalks pose a greater risk than being a passenger on a motorcycle?

Can the current pedestrian infrastructure cope with an influx of children and parents walking to pre-school? Will it cause traffic congestion?

Does the current public transport sector (buses and taxis) have the capacity to transport additional children and parents to and from pre-school?

Are there areas that have limited or no public transport options? Remote rural areas? If so, how many parents may not send their children to pre-school?

Can low-income families afford the additional costs of public transport?

Will the ban lead to some families withdrawing their children from pre-school due to limited access to public transport options and/or affordability issues?

Will the reduction of motorcycle usage lead to a reduction in traffic congestion and motorcycle emissions?

How will the costs associated with fatalities and injuries be valued?

Will the avoided costs of fatalities and injuries be achievable?

What if families refuse to comply with the ban?

Do the police have the capacity and resources to enforce the ban?

These are the type of questions that need to be asked as part of the critical thinking behind the preparation of a RIA.

Objectives

The objective of the proposed regulation is to prevent children less than six years of age from being killed or injured as a passenger on a motorcycle.

Nature and Extent of the Problem

Overview of the Road Safety Problem

Thailand has one of the worst road safety records. Thailand's total traffic accident costs were estimated at 232.8 billion baht or 2.81 percentage of GDP.[1]

As shown in Table 1, Thailand's road fatalities increased markedly from 2,104 in 1987 to peak at 16,727 in 1995 and declined to 12,858 by 2005.

Table 1: Traffic Accidents in Thailand from 1987 to 2005

Year	Bangkok (No of Cases)			Regional (No of Cases)			National (No of Cases)		
	Accident	Fatality	Injury	Accident	Fatality	Injury	Accident	Fatality	Injury
1987	19,745	752	6,333	4,387	1,352	2,256	24,132	2,104	8,589
1988	31,175	817	9,565	4,114	1,198	3,939	35,289	2,015	13,504
1989	31,709	917	10,005	6,388	4,451	3,076	38,097	5,368	13,081
1990	33,064	949	10,701	7,417	4,816	7,551	40,481	5,765	18,252
1991	38,355	1,057	10,778	7,946	5,276	8,777	46,301	6,333	19,555
1992	46,743	983	11,025	14,586	7,201	9,677	61,329	8,184	20,702
1993	64,006	1,011	11,031	20,886	8,485	14,299	84,892	9,496	25,330
1994	72,359	1,290	18,849	30,251	13,856	24,692	102,610	15,146	43,541
1995	64,469	1,284	21,697	24,898	15,443	29,021	94,362	**16,727**	50,718
1996	60,308	1,069	23,314	28,248	13,336	26,730	88,556	14,405	50,044
1997	54,324	903	20,933	28,012	12,933	27,828	82,336	13,836	48,761
1998	46,800	732	18,920	26,925	11,502	33,618	73,725	12,234	52,538
1999	37,868	594	17,104	29,932	11,446	35,434	67,800	12,040	47,770
2000	43,485	1,582	23,368	30,252	10,406	29,743	73,737	11,988	53,111
2001	45,711	1,519	22,854	31,905	10,133	31,106	77,616	11,652	53,960
2002	48,507	1,734	23,488	43,116	11,382	45,825	91,623	13,116	69,313
2003	46,806	1,491	23,597	48,386	11,718	50,555	107,565	14,012	79,692
2004	55,381	865	23,597	69,149	12,901	70,297	124,530	13,766	94,164
2005	-	-	-	-	-	-	122,040	12,858	94,364

Source: Department of Highways, "The Study of Traffic Accident Cost in Thailand", Final Report, Faculty of Engineering, Prince of Songkla University, September 2007. Note data was sourced from the Royal Thai Police and Bureau of Traffic Safety, Department of Highways.

However, the official government data would appear to underestimate the size of the problem. The World Health Organization estimates a much higher number of fatalities as shown in Table 2.

Table 2: Road traffic deaths in Thailand (2010)

Estimated road traffic deaths	Estimated road traffic death rate (per 100,000 population
26,312	38.1

Source: World Health Organisation - Global Health Observatory Data Repository

[1] Dr Pichai Taneerananon, "The Study of Traffic Accident Costs in Thailand" powerpoint presentation, web.worldbank.org

The Department of Highways in its "The Study of Traffic Accident Cost in Thailand", (2007) noted under-reporting of traffic accidents, fatalities and injuries due to police not attending all traffic accidents. Hospital records are more likely to provide a more accurate picture of the extent of the problem.

As a result of the under-reporting, the size of the problem will be documented ranging from the minimum size of the problem (official records) to the maximum size of the problem (based on WHO data). The costs of traffic accidents will be calculated for this range of data.

Motorcyclists represent 74 percent of road fatalities (Table 3) and motorcycles 61 percent of registered vehicles (Table 4). While the data highlights that motorcycle riders comprise the most road fatalities, the data does not provide any insight into the age distribution of the fatalities.

Table 3: Deaths by road user category (2010)

Type of road user	Percentage of deaths	Number of deaths
Riders motorized 2 or 3 wheelers	74 %	10,187
Pedestrians	8%	1,101
Passengers 4 wheeled cars and light vehicles	7%	964
Drivers 4 wheeled cars and light vehicles	6%	826
Cyclists	3%	413
Drivers/passengers heavy trucks	1%	138
Drivers/passengers buses	<1%	100
Other	1%	138
Total		13,766

Source: World Health Organization -Thailand Country Profile 2013

Table 4: Total registered vehicles (2010)

Cars and 4 wheeled light vehicles	9,887,706	35%
Motorized 2 and 3 wheelers	17,322,538	61%
Heavy trucks	816,844	3%
Buses	137,943	<1%
Other	319,798	1%
Total registered vehicles	28, 484, 829	

Source: World Health Organization -Thailand Country Profile 2013

How significant is the problem? What is the magnitude of the problem?

Proportion of Motorcycle Fatalities that are child passengers

A further breakdown of the high-level data is required to identify and quantify the number of children less than six years of age killed and injured as a motorcycle passenger.

The World Health Organization (WHO) cites a study based on data from a trauma registry at the Khon Kaen Regional Hospital in the northeast of Thailand that showed children 0 to 5 years and 5 to 9 years accounted for 1.8 percent and 3.9 percent respectively of the motorcycle accident patients treated at the hospital.

The WHO also cites data from the Asian Development Bank (2004) in respect to age distribution of traffic fatalities in Thailand. This data is shown in Table 5 and the percentage of child fatalities is similar to the data from the Khon Kaen Regional Hospital.

Table 5: Age distribution of traffic fatalities in Thailand

Age (years)	Fatalities percent
< 5	1.6
5-9	1.8
10-14	2.7
15-40	60.4
>40	33.5

Source: World Health Organization - based on data from Asian Development Bank The status of road safety in Thailand. Manila: Asian Development Bank; 2004. Report No.: Country Report: CR 09.

Another study was conducted into 214 fatal motorcycle accidents from autopsy reports performed at Ramathibodi Hospital in Bangkok (responsible for 9 out of the 50 metropolitan districts) from 2003 to 2006. In this case, 10 or 4.7 percent of the 214 fatal motorcycle accidents were to children less than 15 years. The data analysis did not provide any further breakdown of this age group.

Other jurisdictions with a similar profile

Benchmarking other countries with a similar profile where motorcycles are the predominant mode of transport and motorcycle fatalities represent most of the road toll may assist in verifying the above data. A WHO report on motorcycle safety for South East Asian countries revealed Indonesia and Bangladesh have similar profiles to Thailand. In these countries, road traffic injuries of motorcyclists comprise a reported 25 to 70 percent of the total victims. Of these victims, children less than 10 years appear to represent 2 to 3 percent.

While Australia does not have a similar profile to Thailand (children less than six years of age do not travel on motorcycles), it is still worth benchmarking the number of fatalities for children given that Australia has a strong road safety record to see where Thailand stands in comparison. Australia keeps records for

children less than 16 years of age. In 2010, children less than 16 years of age accounted for 52 passenger (motor vehicles) fatalities or 3.85% of the 1,352 road fatalities in Australia.[2]

The Thailand studies are summarized in Table 6 below. It is reasonable based on this evidence and the WHO study on South East Asian countries with a similar profile to Thailand to conclude at least 2 percent of motorcycle fatalities involve child passengers less than six years of age (given that two of the studies showed almost 2 percent for children less than five years of age).

The number of child fatalities, serious and slight injuries will be determined in the next section based on 2 percent of motorcycle fatalities, serious and slight injuries.

Table 6: Summary of age distribution of traffic fatalities studies

Age (years)	Khon Kaen Regional Hospital	ADB (2004)	Ramathibodi Hospital
< 5	1.8	1.6	-
5-9	3.9	1.8	-
10-14			4.7

Number of child fatalities and injuries

Calculating 2 percent of the number of fatalities from Tables 3 & 4 (official data and WHO estimations respectively), Table 7 below shows children less than six years old accounted for an estimated 204 fatalities or 2% of the 10,187 motorcycle fatalities in 2010 and an estimated 389 fatalities or 2 percent of the 19,471 motorcycle fatalities in 2010.

Table 7: Number of child fatalities in 2010

	Total motorcycle fatalities	Child fatalities - 2% of total fatalities
Official Data	10,187	204
WHO estimations	19,471	389

Note: The WHO estimation of 26,312 fatalities has been adjusted to reflect the 74 percent or 19,471 of motorcycle fatalities.

The number of serious and slight injuries was calculated based on detailed data shown in Appendix 1. This data showed a ratio of one fatality for every 13 serious injuries and 39 slight injuries. Table 8 shows the estimated number of child fatalities, serious and slight injuries.

Table 8: Estimated Number of Child Fatalities, Serious and Slight Injuries

	Official data	WHO estimates
Fatalities	204	389
Serious Injuries	2,652	5,057
Slight Injuries	7,956	15,171

[2] Department of Infrastructure, Transport and Regional Economics, "Road Deaths Australia" 2011 Statistical Report, Australian Government.

What is the nature of the problem – what is the loss, harm or other adverse consequence that is being experienced, and by whom?

Cost of child fatalities and injuries

The human capital cost methodology was used to calculate the costs associated with child fatalities and injuries.

The human capital cost methodology comprises three cost categories: human, property damage and general crash.

The human costs category covers loss of productivity, quality of life, medical, EMS and long term care. The property damage costs category covers vehicle and non-vehicle damage costs. The general crash costs category covers insurance administration, police administration, judicial system, ERS and travel delay.

Table 9 shows the value of costs per fatality, serious injury and slight injury. The cost component for each cost category is provided for each type of crash severity in Appendix 2.

Table 9: Value of costs according to crash severity for Thailand in 2007

Crash Severity	Average value of costs (baht)
Per Fatality	5,315,556
Per Serious Injury	147,023
Per Slight Injury	34,761

Source: Department of Highways "The Study of Traffic Accident Cost in Thailand", (2007)

Table 10 shows the total costs for child fatalities, serious and slight injuries. The costs are calculated by multiplying the number for each crash severity category in Table 8 by the value of the appropriate crash severity category in Table 9. For example, 204 child fatalities by $5,315,556 baht = $1,084,373,424 baht and so forth.

Table 10 also shows the total cost ranges from 1,750,836,936 baht (based on official data) to 3,338,605,726 baht (based on WHO estimations).

Table 10: Costs of Child Fatalities, Serious and Slight Injuries

Crash Severity	Cost (baht) based on official data	Cost (baht) based on WHO estimations
Fatalities	1,084,373,424	2,067,751,284
Serious Injury	389,904,996	743,495,311
Slight Injury	276,558,516	527,359,131
Total	**1,750,836,936**	**3,338,605,726**

In the case of risk, what is the likelihood of the adverse event occurring? What evidence do you have to support this initial assessment?

Risk of child fatalities and injuries

OECD countries calculate fatalities per 100,000 persons, per 10,000 registered vehicles and per 100 million vehicle kilometres traveled (VKT). These indicators measure the rate and relative risk of road fatalities taking into account human/vehicle population and traffic volumes.

The aforementioned fatality rates provide a general indication of risk for national and provincial regions. The fatality rates are more meaningful if applied to the specific road locations where fatalities occur.

Number of child fatalities and injuries relative to the total child population

It is important to measure the number of child fatalities and injuries relative to the total child population in Thailand to ascertain the relative risk. Children less than six years of age comprise 6.5 million or 10 percent of the total population of 65 million. [3]

With this population data it is possible to estimate the number of children that are likely to be transported on a motorcycle. Given that 61 percent of registered motor vehicles are motorcycles, it is conceivable that up to 4 million children (6.5 million *61%) could be potentially transported on a motorcycle.

Using the official and WHO estimation fatality data and child population data, Table 11 shows 5.1 to 9.7 child fatalities per 100,000 population of children less than six years of age. [4] The serious and slight injuries per 100,000 population is also provided in Table 11 below.

Table 11: Child Fatalities, Serious and Slight Injuries per 100,000 population 2010

Crash Severity	Official data	WHO estimations
Fatalities per 100,000 population	5.1	9.7
Serious Injuries per 100,000 population	66.3	126.4
Slight Injuries per 100,000 population	198.9	379.3

Table 12 below shows that child fatalities per 100,000 of the child population are considerably lower than the fatality rate per 100,000 for the rest of the

[3] National Statistical Office (web.nso.go.th) 2005 census.

[4] Calculation:-4 million/100,000 = 40. Hence 204 fatalities/40 = 5.1 and 389 fatalities/40 = 9.7) Similar calculations were undertaken for serious and slight injuries. It should be noted that using 2005 population data with 2010 fatality and injury data has resulted in a slight over-estimation of the applicable rates.

population. For example, 5.1 compared with 22.2 for the official data.[5] This strongly suggests that parents and other caregivers are generally risk-averse and take considerable care when riding a motorcycle with a young child aboard. The OECD median fatalities per 100,000 population has been included as a benchmark for the Official and WHO fatality data. However, it is not directly comparable to the child fatality rate.

Table 12: Comparative Fatalities per 100,000 population 2010

Official – total road fatalities	22.2
Official Child fatalities	5.10
WHO – total fatalities	42.5
WHO Child fatalities	9.70
OECD Median fatalities	6.20

Note: OECD median fatalities cited from Department of Infrastructure and Transport, "International Road Safety Comparisons 2010" Statistical Report, Australian Government.

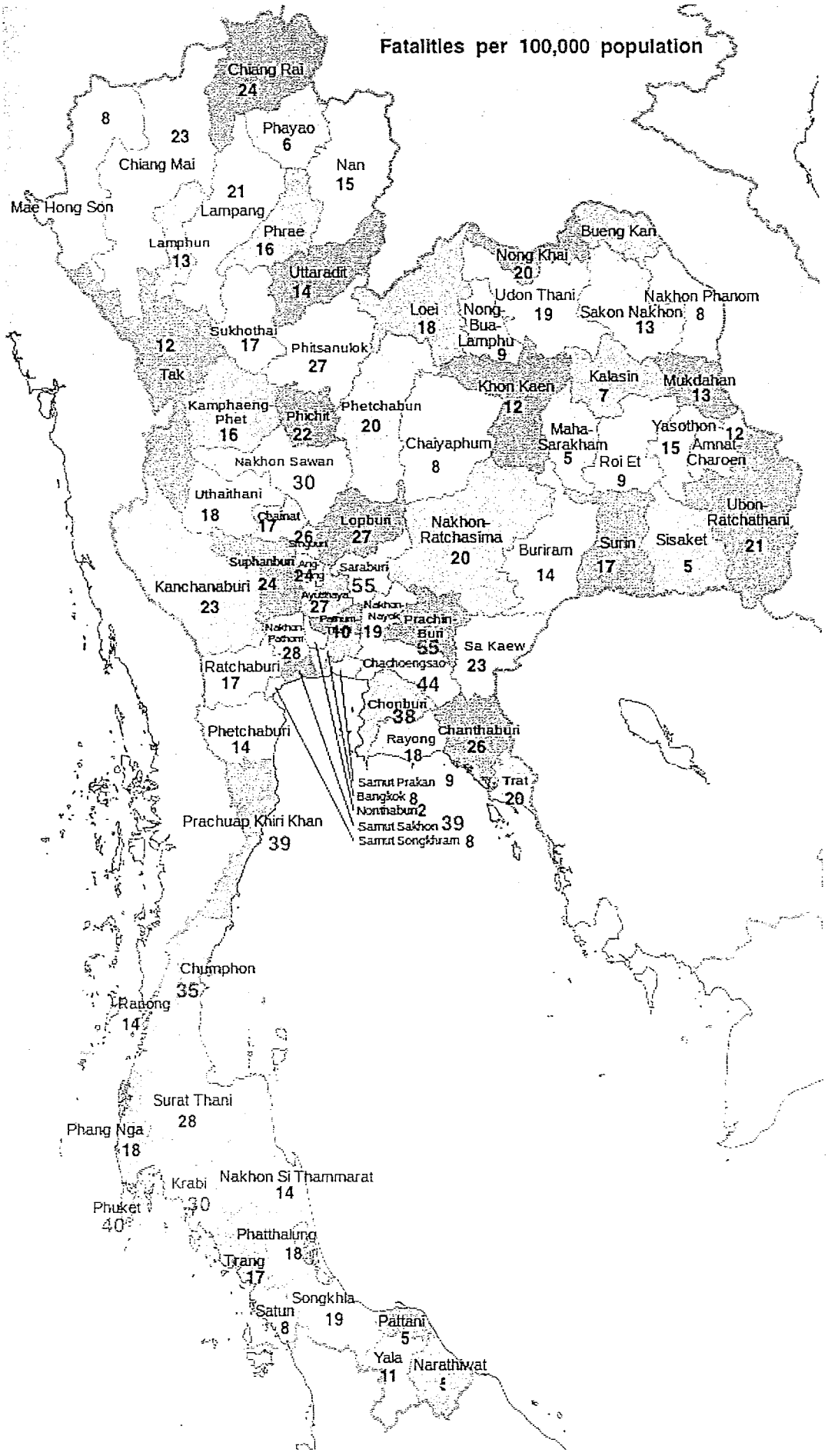
The map on the next page provides the fatality rate per 100,000 population for the 76 provinces in Thailand. The fatality rate is the general rate for all road user fatalities including child fatalities. Provincial data is based on 2005 from the Department of Highways "The Study of Traffic Accident Cost in Thailand" (2007). The detailed data is provided in Appendix 3. Ideally, 2010 provincial data should be used to be consistent with the preceding 2010 data.

Notwithstanding this, the map highlights the significant differences in the fatality rate per 100,000 population across provinces. This is not a perfect indication of risk as a small populated region may have a high fatality rate due to other factors (high transitory road traffic through the region).

There are 10 provinces with fatality rates greater than 30. These are shown in red numerals. Several provinces around and including Bangkok have some of the lowest fatality rates.

Further investigation is required to understand the differences in the fatality rates between provinces including road design, environment, volume of traffic etc.

[5] The official and WHO fatality data and population data has been adjusted to exclude child fatality and child population. For example, Official fatalities 13,562 (13,766 total fatalities -204 child fatalities)/610 (61 million i.e 65 million total population -4 million child population) = 22.2 fatalities per 100,000 population.


Fatalities per 100,000 population
Chiang Rai
24
8
23
Phayao
6
Chiang Mai
Nan
15
21
Mae Hong Son
Lampang
Phrae
16
Lamphun
13
Uttaradit
14
Bueng Kan
Nong Khai
20
Udon Thani
19
Nakhon Phanom
8
Loei
18
Nong-
Bua-
Lamphu
9
Sakon Nakhon
13
Sukhothai
17
12
Phitsanulok
27
Tak
Khon Kaen
12
Kalasin
7
Mukdahan
13
Kamphaeng-
Phet
16
Phichit
22
Phetchabun
20
Maha-
Sarakham
5
Yasothon
12
15
Amnat-
Charoen
Chaiyaphum
8
Roi Et
9
Nakhon Sawan
30
Uthaithani
18
Chainat
17
26
Lopburi
27
Nakhon-
Ratchasima
20
Buriram
14
Surin
17
Sisaket
5
Ubon-
Ratchathani
21
Suphanburi
24
Ang
24
Saraburi
55
Kanchanaburi
23
27
Nakhon-
Nayok
Prachin-
Buri
55
Pathum-
Thani
10
19
Nakhon-
Pathom
28
Sa Kaew
23
Ratchaburi
17
Chachoengsao
44
Chonburi
38
Phetchaburi
14
Rayong
18
Chanthaburi
26
Samut Prakan
9
Trat
20
Bangkok
8
Nonthaburi
2
Prachuap Khiri Khan
39
Samut Sakhon
39
Samut Songkhram
8
Chumphon
35
Ranong
14
Surat Thani
28
Phang Nga
18
Krabi
30
Nakhon Si Thammarat
14
Phuket
40
Phatthalung
18
Trang
17
Songkhla
19
Satun
8
Pattani
5
Yala
11
Narathiwat

Risk Analysis -Fatalities and Injuries per 100,000 million VKT

The average number of personal vehicle VKT[6] is multiplied by the child population to determine the total number of VKT. Using the number of child fatalities, serious and slight injury data from Table 8, the relevant rates per 100 million VKT have been calculated as shown in Table 13 below.

Table 13: Child Fatalities, serious and slight injuries per 100 million VKT (2010)

Crash Severity	Official data	WHO estimations
Fatalities per 100 million VKT	1.8	3.5
Serious Injuries per 100 million VKT	23.4	45
Slight Injuries per 100 million VKT	70.8	135

Table 14 shows a considerable lower fatality rate for children passengers on motorcycles compared to all other motorcycle fatalities This is similar to the results in Table 12 Comparative fatalities per 100,000 population and provides further evidence that parents and other caregivers are generally risk-averse and take considerable care when riding a motorcycle with a young child aboard.

Table 14: Comparative child and motorcycle fatalities per 100 million VKT

Crash Severity	Official data	WHO estimations
Child Fatalities per 100 million VKT	1.8	3.5
Motorcycle Fatalities per 100 million VKT	26.7	51

In 2010, OECD median fatalities were 0.54 per 100 million VKT traveled and applied to fatalities for all ages groups. [7] Obviously, the median fatality rate would be even lower than 0.54 for children less than six years of age.

[6] An Analysis of VKT of Major Cities in Thailand (2010) measured 2810 VKT for personal vehicles for the Nakhon Ratchasima province. It has been assumed this is representative of all provinces other than Bangkok that has a higher VKT.

[7] OECD median fatalities cited from Department of Infrastructure and Transport, "International Road Safety Comparisons 2010" Statistical Report, Australian Government.

What are the primary causes of the problem?

Primary Causes for Child Fatalities and Injuries

Road safety literature has demonstrated that there are many different contributing factors involved in crashes. These are categorized as environmental, human and vehicle factors.

Road safety empirical studies analyze these factors and seek to determine the key contributing factors that cause specific type of crashes and recommend appropriate countermeasures to prevent these crashes.

Data was recorded for 214 fatal motorcycle accidents from autopsy reports performed at Ramathibodi Hospital in Bangkok (responsible for 9 out of the 50 metropolitan districts) from 2003 to 2006.

The data comprised:

- age,
- gender,
- riding position,
- time of accidents,
- type of crash -single vehicle crash (SVC) and multiple vehicle crashes (MVC)
- crash objects
- alcohol consumption levels
- causes of death

Table 15:

Personal Characteristics		Number (%)
Gender	Male	188 (87.9)
	Female	26 (12.1)
Riding Position	Rider	183 (85.5)
	Passenger	31 (14.5)
Age, years	< 15	10 (4.7)
	15-24	96 (44.9)
	25-34	65 (30.4)
	35-44	24 (11.2)
	> 45	19 (8.9)
Age (years); mean ± SD (range): 27.4 ± 10.76 (3-69)		

This study found most motorcycle fatalities were male riders, 15 to 34 years of age, alcohol-related and occurred from 9 pm to 6.00 am.

The study did not seek to find the causes for child fatalities that occurred whilst on a motorcycle. However, the time for most of the high risk accidents occurs when most children less than six years of age would be home and asleep.

Young male motorcyclists are the highest risk group in most countries including in Australia as demonstrated in the study, "Analysis of High Risk and High Severity Groups among Motorcyclists", Monash University Accident Research Centre - Report #77 - 1995

Motorcycle accidents in other jurisdictions

The other vehicle is commonly at fault in multi-vehicle crashes involving motorcycles. In an analysis of 900 motorcycle accidents in Los Angeles Hurt, Oullet and Thom (1981) found that the most common motorcycle accident involved another vehicle (75%) causing the collision by violating the right-of-way of the motorcycle at an intersection, usually by turning left in front of the oncoming motorcycle. In Victoria, motorcyclists are commonly the vehicle going straight ahead in right-turn crashes, being in the rear in rear-end crashes and in the ongoing lane in sideswipes. [8]

The Thailand Accident Research Center (TARC) is undertaking during 2014/15 an in-depth study of the main types of motorcycle accidents to determine appropriate countervailing measures.

Detailed analysis of the causes of accidents is lacking in Thailand due to inadequate data. Detailed data on child fatalities and injuries would require the collation of crash characteristics such as:

Crash Victims

Age – segmented age groups;
Gender – Male or Female;
X – driver, passenger and pedestrian;
Crash severity – fatality, serious injury, minor injury and property damage;
Location - capital city, other urban, rural townships and other rural categories;
Date and Time of Day;

Weather Conditions - dry, wet, slippery from rain precipitation, and frozen categories;

Distance from crash site to the home address of victims (only for national citizens);

Causal factors

Human causal factors - impairment from alcohol/drug use, driver fatigue and unlicensed categories;

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[8] Haworth.N, Symmons. M & Kowadlo.N, *"Hazard Perception by Inexperienced Motorcyclists"*, Monash University Accident Research Centre, Report No. 179, Dec 2000.

Vehicle causal factors – vehicle age and vehicle defects (tyres, brakes, suspension and other defects categories) categories;

Crash Type

Crash Type – crashes that involved a pedestrian, crashes that occurred between vehicles approaching from adjacent directions (intersections only), crashes that occurred between vehicles traveling in opposing directions, crashes that occurred between vehicles traveling in the same direction, crashes that occurred while a vehicle was manoeuvring, crashes that occurred while a vehicle was overtaking, crashes between a vehicle and an obstacle in the path of travel, crashes that occurred when a vehicle left a straight roadway, crashes that occurred when a vehicle left a curved roadway and miscellaneous crashes;

Road Characteristics

Road Characteristics - intersection without traffic lights, intersection with traffic lights, midblock (section of road between intersections) and roundabout categories;

Road Type 1 - divided road and undivided road categories;

Road Type 2 - sealed road and unsealed road categories;

Road Type 3 – straight road, curved road and sloping road categories;

Road Condition - good and damaged (potholes) categories;

Road Infrastructure - no pedestrian pavement, pedestrian pavement with buildings abutting pavement (no escape area), pavement with roadside area, clear roadside with run-off area, roadside area with fixed objects (trees, poles, bridges, fences etc) categories;

Speed Zone – speed limit categories

With the collation and analysis of the range of variables used, it is likely that patterns will emerge and there may be a need to identify segments of the crash population where a subset of crash data may be more appropriate to consider.

How is the problem currently regulated? Are there deficiencies in the existing regulatory system that might fix the problem if corrected?

Current regulation of the problem

Thailand law requires motorcycle riders and passengers to wear motorcycle helmets. Motorcycle helmets are a highly effective road safety intervention that reduces the frequency and severity of head injuries resulting from traffic crashes. The World Health Organisation cites the Cochrane review that claims helmet use reduces the risk of motorcycle injuries by 69% and motorcycle fatalities by 42%.[9]

It is estimated that while most motorcycle riders wear a helmet only about 9 percent of passengers wear a helmet. The government has delivered a public education program to encourage motorcycle passengers to wear helmets but this appears to have failed to reduce the high level of non-compliance.

The extent of the problem in regards to all motorcycle fatalities and serious injuries could be substantially reduced if Police enforcement together with substantial fines for not wearing a helmet were implemented.

For this to lead to broad changed community behaviour, the Police would need to allocate appropriate resources for stopping motorcyclists and to issue fines. In particular, most people must feel that there is a reasonable probability of being apprehended by a Police officer and issued a fine while riding a motorcycle. If this is not the case, change behaviour across the community is less likely. In this regard, it should be noted that about 80 percent of the Thai population ride motorcycles and that his may create a significant resource challenge to deal with so many riders and passengers

[9] Aaron Pervin, Jonathon Passmore, Mirjam Sidik, Tyler McKinley, Nguyen Thi Hong Tu c & Nguyen Phuong Nam, "Viet Nam's mandatory motorcycle helmet law and its impact on children", *Bulletin of the World Health Organization* 2009; 87:369-373.

Assess the consequences of no action

What are the consequences of not taking any action?

Could relying on the market in conjunction with the general application of existing laws and regulations solve the problem? If not, why not?

Consequences of no government action

It is useful to compare the experience of other countries that mandate the wearing of motorcycle helmets where the motorcycle is the main mode of transport.

Thailand has 33.5 million registered motor vehicles and 20 million (2013) or 60 percent are registered motorcycles. Vietnam would appear to be a comparable country given that it has 26 million registered motor vehicles and 95 percent are motorized two wheelers. Similarly, Vietnam has a high road toll; in 2007 there were 12,800 fatalities or 15 fatalities per 100,000 population. An estimated 60 percent of all road fatalities occur among motorcycle drivers and passengers.

A study was conducted for all road traffic injury patients with head injuries admitted to 20 provincial and central hospitals 3 months before and after the new law came into effect on 15 December 2007. The study found a 16 percent reduction in the risk of road traffic head injuries and an18 percent reduction in the risk of road traffic death. [10]

It would appear the public perception that motorcycle helmets worn by children, particularly young children, may cause neck injuries has undermined compliance. Conflicting views expressed by the medical profession in Vietnam has divided the Vietnamese community and they have erred on the side of caution and mostly decided to not let their children wear a motorcycle helmet.

A public education campaign to counter the perception that motorcycle helmets do not cause neck injuries would more than likely need to be lengthy campaign and costly to gain the confidence of the community and to persuade most parents to ensure that their children wear motorcycle helmets. The effectiveness of such a public education campaign would be dependent on the degree of continued divisive views publicly expressed by some within the medical profession. Hence, there is a risk that such a campaign may fail to deliver an adequate increase in the proportion of children wearing motorcycle helmets to justify such an investment by government where these funds may be more

[10] Passmore J, Tu NT, Luong MA, Chinh ND, Nam NP, "Impact of mandatory motorcycle helmet wearing legislation on head injuries in Viet Nam: results of a preliminary analysis", Traffic Injury Prevention, 2010 Apr; 11 (2):202-6.

effectively used for other countermeasures that are more likely to deliver road safety benefits.

Will the problem self-correct within a reasonable timeframe?

There are many factors that contribute to road fatalities and injuries. Similarly, governments use a wide range of countermeasures to address these factors with the aim of improving road safety.

In this respect, it is useful to understand the impact of these countermeasures and whether these have been, or are likely to be adopted by Thailand in the coming years.

Thailand has experienced high population growth since 1950s and a high growth of vehicle ownership (particularly motorcycles) since the 1970s. Any government struggles to expand road capacity to accommodate rapid population and motor vehicle growth. New road infrastructure takes many years to build.

California, Texas and Florida experienced similar population and motor vehicle growth from 1950 to the early 2000s. While the road fatality toll in the U.S.A peaked in 1976, the road fatality toll peaked in California in 1984, Texas in 1986 and Florida in 2003. A key factor for the delay in the reduction of the road toll in these states was due to the higher population growth compared with other states. From 1950 to 2003 the population in California's doubled from 20 to 40 million, Texas from 20 to 50 million and Florida tripled from 15 to 45 million. Once the population growth curve flattened, these states experienced about a 5 percentage annual reduction in their road toll.

The population growth over the past decade in California, Texas and Florida has declined and all three states have experienced significant reductions in their road tolls.

By contrast, the United Kingdom has had minimal population growth (51 to 57 million from 1950 to 2003) and has invested heavily in road infrastructure and other safety countermeasures. This has resulted in a dramatic reduction in the road toll but would have been unlikely in the event that it had population growth like California, Texas and Florida.

The World Bank (United Nations) has forecast that Thailand's population growth will begin to decline from 2015. Based on the experiences of California et al, it is likely that as Thailand expands its road infrastructure, its road toll will also decline over the next decade.

It is difficult to determine Thailand's annual rate of reduction once its population growth curve flattens. It is problematic that Thailand would achieve a similar annual rate of reduction given that California et al had well established road networks in the 1950s and most of Thailand's roads are not divided to ensure motor vehicles, motorcycles and pedestrians are separated from each other.

Another factor that needs to be taken into account is the growth in registered passenger vehicles. In 2004, there were about 6.5 million passenger vehicles or 33 percent of the total number of registered motor vehicles. By 2013, the number of registered passenger vehicles had increased to 13 million or 39 percent of the total number of registered motor vehicles.

It is noteworthy that in 2003, Thailand introduced a requirement that expressways in Bangkok must exclude motorcycles. This was instigated primarily to reduce traffic congestion but also would provide road safety benefits to motorcyclists.

Justification for Government Intervention

The analysis of the nature and size of the problem has revealed the following:

At a minimum, children less than six years of age comprised 204 or 2% of the 10,187 motorcycle fatalities.

Based on WHO estimations, children less than six years of age comprised 389 or 2% of the 19,187 motorcycle fatalities.

The cost to the community from child fatalities, serious and slight injuries is estimated from 1.750 billion baht to 3.338 billion baht per annum.

There were 5.1 or 9.7 child fatalities per 100,000 population of children less than six years of age. This is lower than the 22.2 to 42.5 fatalities per 100,000 population for all other road users.

The risk of a fatality for a child less than six years of age being transported on a motorcycle is 1.8 to 3.5 fatalities per 100 million vehicle-kilometers-travelled (VKT). This is lower than the 26.7 to 51 fatalities per 100,000 population for motorcyclists.

Most motorcycle accidents occur amongst male riders, 15 to 29 years, mostly intoxicated and from 9.00 pm to 6.00 am.

The law requires motorcycle riders and passengers to wear motorcycle helmets. The lack of compliance and enforcement of the current law would appear to not address the problem of child fatalities and injuries.

Public education to support the current law regarding the mandatory wearing of motorcycle helmets would appear to be problematic given the Vietnam experience where many communities refused to make their children wear a motorcycle helmet in fear that they may incur neck injuries.

Thailand, like California, Texas and Florida, have experienced rapid population and motor vehicle growth. With an expected decline in population growth, an increase in the proportion of passenger vehicles relative to motorcycles, and

improved road networks (road engineering strategies), it is likely that the number of overall fatalities and injuries will decline (including children) even if the government does not intervene and introduce any new measures.

The improvements are likely to be varied with greater declines in Bangkok and other municipal areas due to the higher ownership rate of passenger vehicles relative to motorcycles. Accordingly, there will be a lag in road safety improvement in rural areas, particularly low socio-economic areas with high motorcycle dependency and low levels of road infrastructure investment (including road safety engineering strategies).

The problem analysis has revealed a significant cost associated with child fatalities, serious and slight injuries that are incurred traveling on a motorcycle. However, the analysis also revealed that children less than six years of age are at less risk on a motorcycle compared to other road users. This is not dissimilar to other OECD countries. The significance of the cost to the community is worthy of further consideration in terms of whether a countermeasure can be developed to specifically address child fatalities and injuries incurred traveling on a motorcycle.

Options

The following options listed below are examined to assess whether they are likely to address the problem:

- Option 1 Total Ban
- Option 2 Selective Ban targeted at high risk areas
- Option 3 Warning Signs for high risk areas
- Option 4 Public education

A description of each option is provided below.

Option 1 Total Ban

This option would impose a total ban on children less than six years of age from being transported on a motorcycle. A total ban would apply at all times in all areas throughout the country.

The total ban would affect families that use a motorcycle as their primary means of transport and who have an estimated 970,941 children less than six years of age.[11]

A total ban would restrict competition and directly affect motorcycle taxis from providing transport services to children less than six years of age. A total ban would provide advantages to bus and other taxi transport providers. However, it is not clear whether these other forms of transport have the capacity to meet the demand if a total ban was introduced.

Compliance and enforcement is problematic given the experience with compliance and enforcement of mandatory wearing of a motorcycle helmet.

Option 2 Selective Ban targeted at high risk areas

This option would impose a ban on children less than six years of age from being transported on a motorcycle in selected areas that are considered high risk areas (black spots) and have a history of multiple accidents, fatalities and injuries. .

High risk areas have not been identified and research would need to be undertaken to identify appropriate areas. The Thailand Accident Research Center (TARC) is currently undertaking a study to identify black spots in several

[11] The 970,941 children is based on 61% (percentage of motorcycle use) of 1,591,706 children enrolled in kindergartens (2007). Source of kindergarten enrolments: Australian Education International "Thailand Regulatory Factsheet 2013" cites Basic Statistics of the Ministry of Education 2007.

provinces. The results of this study could help to inform the likely number of high risks areas in Thailand. The goal of this project is to improve the road safety by implementing engineering measures, to evaluate performance of engineering measures by conducting before-after analysis, and to present the benefits of engineering measures to policy makers and provide data for other similar projects. A total of 10 black spot locations will be selected from different provinces in Thailand. Then, the process of studying sites, data collection, conceptual and detailed design, and implementation of appropriate improvement will be conducted.

Similar to option 1, a selective ban would restrict competition and directly affect motorcycle taxis from providing transport services to children less than six years of age in high risk areas. A selective ban would provide advantages to bus and other taxi transport providers. However, it is not clear whether these other forms of transport have the capacity to meet the demand if a selective ban was introduced.

Similar to option 1, compliance and enforcement would be an issue. However, enforcement would be more manageable for the Royal Thai police to enforce given the smaller areas involved compared to option 1.

Option 3 Warning Signs at high risk areas

Similar to option 2, high risk areas have not been identified and research would need to be undertaken to identify appropriate areas.

Appropriate design of warning signs would need to be installed at high risk areas. The design of the warning sign would need to clearly communicate to the motorcycle rider that they were entering an area that has a high number of accidents and fatalities. This would be similar to the 'blackspot' signs installed at high fatality intersections in Victoria, Australia.

Warning signs rely on motorcyclists and other road users to take greater care driving through these high risk areas. This option is effectively a form of self-regulation and requires voluntary compliance by all road users to take a more risk averse approach when driving through high risk areas.

Option 4 Public education

A public education campaign could be undertaken targeted at families with young children highlighting the number of child fatalities and injuries and the appropriate measures that can be taken to reduce the risk of fatality or injury. This could include revisiting the mandatory wearing of motorcycle helmets and providing medically sound advice about the merits of young children wearing a motorcycle helmet.

A public education campaign to counter the perception that motorcycle helmets do not cause neck injuries would more than likely need to be lengthy campaign and costly to gain the confidence of the community and to persuade most

parents to ensure that their children wear motorcycle helmets. The effectiveness of such a public education campaign would be dependent on the degree of continued divisive views publicly expressed by some within the medical profession. Hence, there is a risk that such a campaign may fail to deliver an adequate increase in the proportion of children wearing motorcycle helmets to justify such an investment by government where these funds may be more effectively used for other countermeasures that are more likely to deliver road safety benefits.

There is no emphatic empirical evidence that public campaigns used solely as the primary countermeasure deliver road safety benefits in terms of a reduction in fatalities and injuries. Public campaigns tend to be complementary to inform the public about the introduction or changes to countermeasures to deal with a specific road safety problem.

The effectiveness of public education is dependent on the public perceived risk of child fatalities and injuries as well as the enforcement of regulation such as the mandatory wearing of motorcycle helmets for riders and passengers. Given that the level of compliance is currently low throughout most parts of Thailand, it is unlikely that current enforcement practices are likely to improve compliance levels.

For these reasons, option 4 is not considered a feasible alternative to solely address child fatalities and injuries, and will not be considered further or assessed as a viable alternative.

Assessment of Options

Option 1: Total Ban

Costs

Direct Costs

A total ban would impose direct costs on families dependent on a motorcycle as their primary mode of transport. This would affect families of 4 million children less than six years of age. The direct cost to families involves two types of costs; the opportunity cost to parents or other family members to accompany their children on alternative modes of transport and the incremental cost associated with alternative modes of transport.

The opportunity cost entails the time difference between a family member taking a child on a motorcycle and alternative modes of transport. The time difference is the opportunity cost of potential foregone income that could have been derived had the family member not been required to spend additional time using an alternative mode of transport.

The incremental cost of alternative modes of transport is the cost difference on a per km basis for using a motorcycle and alternative modes of transport.

The ban would also impose direct costs on motorcycle taxis and restrict competition in the public transport sector.

These direct costs are discussed and quantified below.

Opportunity cost to families

It is common for families dependent on a motorcycle, for either the father or mother to transport their young children to pre-school institutions, shops as well as to make social, cultural and religious visits. The motorcycle is also critical for transporting a sick child to the local doctor, health centre or the hospital in emergency situations.

Under this option, parents would need to make arrangements for leaving their children that are less than six years of age at home with another care-giver while they went to work, shopping, transported older children to school, or made social visits to friends or family relatives, or to attend cultural and religious ceremonies.

However, not all families would need to take their young children on a motorcycle when transporting older children to school. Most Thai families have large extended families where they can rely on grandparents or older siblings to care for younger children while a parent is transporting older children to school.

It is estimated that about X percent of families have large extended families that can assist with caring for younger children when the parent needs to go to work, shop or transport older siblings to school.

Opportunity costs for family members using alternative modes of transport

It is difficult due to the absence of data to estimate the number of trips per day a child is transported on a motorcycle. However, young children from three to five years of age attend pre-school classes, kindergartens and/or childcare centres. Invariably, parents or older siblings that are dependent on a motorcycle, transport their young children on a motorcycle from home to these institutions.

A total ban would have its greatest impact in respect to sending young children to these institutions and would require parents to consider other modes of transport. Data on pre-school attendance is available and costs estimates can be undertaken. Up to 970,941 children are transported to and from pre-school whose families are dependent on a motorcycle as their primary mode of transport. It has been assumed for the purposes of calculating the costs that these families would transport their children by motorcycle notwithstanding that some of these families may currently use alternative modes of transport.

An alternative mode of transport requires six person trips per day. A family member escorting a young child to pre-school (2 person trips), the family member returning home (1 person trip), the family member leaving home to pick –up child (1 person trip) and the family member escorting the young child home (2 person trips). Using the 970,941 affected children and multiplying 6 person trips equates to 5,825,646 person trips per day of pre-school. This has been rounded to 6 million trips person trips.

Families living within walking distance of a pre-school centre could opt to walk. Given the nature of narrow lanes, many without sidewalks, this could actually pose a greater risk to young children than riding on a motorcycle, particularly if accompanied by an elderly grandparent. Both young children and the elderly are considered vulnerable pedestrians.

Alternatively, some parents could decide to use buses to undertake some of these activities. However, even in these circumstances, the family would need to be within easy walking distance of a bus stop.

In other cases, some families with the financial means could use motor vehicle taxis.

Parents would need to make appropriate transportation arrangements based on their proximity to a pre-school institution and the choice of transport modes available in the area. Walking directly to a pre-school institution or walking to a bus stop involves a cost to family members; that is the time involved that could have been used productively for other pursuits including generating an income.

Parents, older siblings and grandparents already incur this cost when they transport a young child on a motorcycle. Accordingly, the cost of a total ban would be the additional cost imposed from using an alternative mode of transport. The additional cost is known as the incremental cost.

Walking from home to a pre-school institution and walking to a bus stop would be a less efficient mode of transport compared with a motorcycle given the longer time involved in this pedestrian activity. It is estimated (based on xxxx) that a round trip for this mode of transport would involve about one hour per day, X hours per week (based on the number of days per week a child attends a pre-school institution) and X hours per annum.

An estimated X % of families could walk directly to a pre-school institution and an estimated X % of families could walk to a bus stop (based on .....). Average monthly earnings are used to determine the hourly rate for persons involved in walking with a young child. Accordingly, the estimated incremental cost of X baht per annum is based on the number of families that nominate walking as their preferred mode of transport multiplied by the daily incremental cost 50 baht.

A pre-booked passenger vehicle taxi that picked up the child and family carer from the home would have the same level of efficiency as a motorcycle, and may have superior efficiency, as vehicles tend to travel at higher speeds than motorcycles carrying young children.

Incremental cost of using alternative modes of transport

In addition to the incremental cost incurred by family members to use alternative modes of transport to attend a pre-school institution, the family would incur the incremental cost for paying to use these other modes of transport. That is the difference between the operating costs of a motorcycle and the other modes of transport.

In regards to walking directly from the home to a pre-school institution, there would be an incremental benefit as there are no fares associated with walking. The operating cost of an average motorcycle is X baht (based on the average time for a round trip to a pre-school institution). The estimated percentage of families that could walk directly to a pre-school institution is X % (based on .....). Accordingly, the estimated incremental benefit is X baht per day per family and X baht per annum (number of families that nominate walking as their preferred mode of transport multiplied by the daily incremental benefit X baht).

The estimated incremental cost with using a bus as the main means of transport is X baht per day. The cost of using a bus involves the fare for the family carer (four trips @X baht) and the child (two trips@ x baht. = X baht). The operating cost of an average motorcycle is X baht as discussed above. The difference in the cost between a bus and motorcycle is X baht. The estimated percentage of families that would need to use a bus to transport their child to a pre-school institution is X % (based on .....). Accordingly, the estimated incremental cost is X baht per day per family and X baht per annum (number of families that

nominate a bus as their preferred mode of transport multiplied by the daily incremental cost X baht).

The estimated incremental cost with using a passenger vehicle taxi as the main means of transport is X baht per day. This cost is based on four fares @ X baht per day (four trips for the family carer and two trips trips@ x baht. = X baht). The operating cost of an average motorcycle is X baht as discussed above. The difference in the cost between a taxi and motorcycle is X baht. The estimated percentage of families that would use a taxi to transport their child to a pre-school institution is X % (based on .....). Accordingly, the estimated incremental cost is X baht per day per family and X baht per annum (number of families that nominate a bus as their preferred mode of transport multiplied by the daily incremental cost X baht).

The average incremental cost for the various alternative modes of transport (other than pedestrian) is estimated at 50 baht and the average incremental cost to family members accompanying their children on alternative modes of transport is estimated at 50 baht. This imposes total incremental costs of 100 baht per day per family or 97,094,100 baht per day for the families of the affected 970,941 pre-school children.

On an annual basis, this translates into a total incremental cost of almost 20 billion baht (on the assumption that pre-school operates 5 times per week, 40 weeks per annum).

A summary of the annual costs is provided below.

Incremental cost to carer walking to pre-school institution	X million baht
Incremental cost to carer walking to bus stop	X million baht
Incremental cost with walking	(X million baht)
Incremental cost with using a bus	X million baht
Incremental cost with using a taxi	X million baht
Total incremental cost:	X billion baht

In addition, there would be incremental costs associated with finding alternative transport for taking trips for health, cultural, religious, recreation and other social activities. As discussed before, no data exists to quantify these costs.

Restriction on Competition

The total ban would also restrict competition in the passenger transport sector. Motorcycle taxis play a large role in providing transport services and would not be permitted to carry children less than six years of age. There are an estimated 80,000 motorcycle taxis that would be affected by the total ban. It is estimated (based on survey from major motorcycle taxi firms) that young children less than six years of age comprise X % of taxi trips and the loss of revenue to the motorcycle taxi sector is estimated at about X million baht per annum.

Further consultation is required with the motorcycle taxi industry to ascertain whether the loss of pre-school children and their family member would be significant enough to impact on employment opportunities in the industry.

Indirect Costs

Impacts on early child development

The ban may have unintended consequences for early child development where some families have limited public transport choices or are unable to afford the additional costs of public transport.

The impact on remote rural areas may actually deter some families from sending their children to pre-school institutions where they have limited or no access to public transport.

Similarly, low socio-economic groups across the country may also withdraw their children from pre-school institutions in cases where they are dependent on public transport but due to financial hardship cannot afford the incremental costs associated with public transport.

Impacts on the capacity of alternative modes of transport

The ban would require a shift from motorcycle transport to alternative modes of transport. Other than for those families that can walk from home to their pre-school centre, it is not clear whether the current public/private bus network and motor vehicle taxis have the capacity to absorb up to 6 million person trips per day.

Impacts on the capacity of pedestrian infrastructure, congestion and road safety

Pedestrian facilities (sidewalks and bridges across busy roads) are fairly limited throughout Thailand. It is not clear whether the current road infrastructure could cope with increased pedestrians. If a significant proportion of the 6 million person trips undertaken on a daily basis to pre-schools involved walking as the alternative mode of transport, the lack of appropriate and safe pedestrian infrastructure could lead to unintended consequences of increased congestion (pedestrians spilling onto the road and stopping traffic) and the associated safety risks to young children and family members.

Benefits

Direct Benefits

The affected families would directly benefit from the ban in terms of no loss of life or injury to their children. Families and the wider community would directly benefit from the avoided costs associated with fatalities and injuries.

A total ban would prevent from 204 to 389 children being killed on a motorcycle. In addition, a total ban would prevent a considerable number of serious and slight injures as shown in Table 16.

Table 16: Estimated Number of Child Fatalities, Serious and Slight Injuries

	Official data	WHO estimates
Fatalities	204	389
Serious Injuries	2,652	5,057
Slight Injuries	7,956	15,171

The ban on children less than six years of age being transported on motorcycles would avoid the costs associated with child fatalities, serious and slight injuries and generate annual savings from 1.750 billion baht to 3.338 billion baht as shown in Table 17 below.

Table 17: Avoided Costs of Child Fatalities, Serious and Slight Injuries

Crash Severity	Cost (baht) based on official data	Cost (baht) based on WHO estimations
Fatalities	1,084,373,424	2,067,751,284
Serious Injury	389,904,996	743,495,311
Slight Injury	276,558,516	527,359,131
Total	1,750,836,936	3,338,605,726

However, as discussed in the nature and extent of the problem section, the level of compliance is an issue with road traffic laws. In particular with motorcycles, it is a requirement for the rider and passengers to wear a motorcycle helmet. Yet the level of compliance varies across Thailand and it is common for the motorcycle rider to wear a helmet while other children (including those below six years of age) to not wear a helmet.

In terms of enforcement, the modus operandi of police is to establish designated police checks points on major roads to stop and check the licence, registration and third party insurance papers of the driver and to also conduct vehicle roadworthiness where appropriate. Given that most families would undertake small trips from their home to a pre-school institution mostly along residential streets and lanes, it is unlikely that the current location of police checks would detect non-compliance with a total ban unless the police spread its resources to establish police check points at pre-school institutions.

In view of a possible low compliance with a total ban and the resource constraints of police providing police check points at X number of pre-school

institutions across the country, it is unlikely that the full benefits of a total ban would eventuate in the first few years of its operation and may always struggle to achieve the desired benefits unless supported by a public education campaign and the willingness of people to comply with the law.

Indirect benefits

Impact on traffic congestion and environment

The absence of about 970,941 motorcycles during the period when children are dropped off and picked up from pre-school is likely to reduce traffic congestion and the associated travel delay costs to other commuters. Parents transporting their children on a motorcycle represent about 5 percent of the total number of registered motorcycles. There is insufficient data on the proportion of registered motorcycles that are likely to be on the road at the same time as motorcycles with children traveling to and from pre-school to determine the current congestion levels and associated travel costs to predict possible cost savings under this option.

While it is difficult to estimate the reduction in motorcycle usage by families with pre-school children, the ban may also provide some environmental benefits with reductions in motorcycle emissions.

Impact on patronage levels for alternative modes of transport

Alternative modes of transport such as public and private bus companies, and taxis are likely to experience increased patronage and revenue from the proposed ban. It is difficult to estimate the expected indirect benefits to each of the different alternative modes of transport.

Summary of Costs and Benefits

The incremental costs to families to use alternative modes of transport to take their children to pre-school was estimated at about 20 billion baht per annum and the benefits of the avoided costs associated with fatalities, serious and slight injuries was estimated to range from 1.750 billion baht to 3.338 billion baht per annum; leaving a net cost of 18.250 billion baht to 16.662 billion baht per annum.

The ban would also have indirect costs and unintended consequences for early childhood development for families with limited access to public transport or low-income families that could not afford the additional costs associated with public transport.

The ban imposes a restriction on competition that removes the option of a main public transport provider (motorcycle taxis) providing transport options to children and families. This calls into question whether the capacity of other public transport operators and the pedestrian infrastructure can cope with up to an additional 6 million person trips on a daily basis. In the case of pedestrian

infrastructure, additional pedestrian traffic may lead to increased traffic congestion and road safety for children and family members. The increased patronage of public transport may in the medium term result in increased investment to improve capacity and the reduced motorcycle usage may offset to some extent traffic congestion.

Option 2 Selective Ban targeted at high risk areas

Costs

The direct costs would be the same as in option 1. However, they would be limited to specific areas that were deemed high risk and have multiple numbers of fatalities, serious and slight injuries. These high risk areas are commonly referred to as 'black spots' where the road design and topography are inherently dangerous.

It is difficult to quantify the direct costs as the number and location of high risk areas have not been identified in Thailand. In some cases, a high risk area may be specific roads that have a history of multiple accidents.

The government would incur administrative costs undertaking research into identifying high risk areas and installing appropriate road signage advising families to not transport young children on a motorcycle. These costs have not been able to be quantified and consultation is required with the Department of Highways and TARC to ascertain the cost per high risk area and the likely number of high risk areas across the country.

Enforcement would be more manageable for the Royal Thai police to enforce given the smaller areas involved compared to option 1.

Benefits

There is no guarantee that most child fatalities and injuries are located within high risk areas. It is assumed that a selective ban would reduce an undetermined number of fatalities and injuries without significantly impacting on the freedom of families dependent on a motorcycle as their primary mode of transport to transport their young children.

In these circumstances, affected families may be able to still use their motorcycle to transport their child to pre-school by navigating their way around these high risk roads.

Summary of Costs and Benefits

The key direct costs of a selective ban on high risk areas would be incurred by government in identifying high risk areas, installing appropriate signage and the cost of enforcement. However, depending on the number and the size of the high

risk areas, the Royal Thai Police may have the capacity and resources to effectively monitor and enforce selective bans of high risk areas.

However, until further research has been undertaken to ascertain whether there is a positive correlation between high risk areas and most child fatalities and injuries, it is difficult to assume that a selective ban would be effective in achieving a significant reduction in child fatalities and injuries to warrant public sector investment in identifying high risk areas and committing the required resources to establish high risk areas and to enforce the selective ban.

Option 3 Warning Sign at high risk areas

Costs

Similar to option 2, the government would need to invest public sector resources in identifying high risk areas by analyzing accident data and consulting with the local community. On the assumption that this task may take 1,000 working hours @500 baht labour cost per hour, the total cost to complete one high risk area would cost about 500,000 baht. If 500 high risk areas were undertaken, the total cost would be about 250 million baht.

A further 50 million baht may be required for design of the warning sign, management and administration of the project.

The elements of sign cost include: materials, fabrication, inventory control, maintenance and installation costs (labor and transport). A sign may cost 5,000 baht each and about 1,000 baht for labour and equipment for the installation of each sign (needs to be confirmed from the Department of Highway). An average of 10 signs may be needed for each high risk area at a cost of $60,000 baht.

If 500 high risk areas were identified across the country, the total cost of signage would be about 30 million baht.

In summary, the cost to the government could be in the order of 330 million baht. This would be a one-off cost with minimal ongoing maintenance costs to replace worn and broken signs.

Benefits

Traffic control (signals, signs, geometry, markings) were found in an Australian study to be definitely relevant in about 20 percent of accidents and possibly relevant in a further 17 percent of accidents. It is not clear whether this would translate to Thailand.

Notwithstanding this, it has been assumed that warnings signs could potentially reduce 20 percent of accidents. Similar to option 2, there is no guarantee that there is a positive correlation between high risk areas and the location of child fatalities and injuries.

On the basis that a 20 percent reduction could be achieved, this would result in the following estimated number of avoided fatalities, serious and slight injuries as shown in Table 18.

Table 18: Estimated Number of Avoided Child Fatalities, Serious and Slight Injuries

	Official data	WHO estimates
Fatalities	41	78
Serious Injuries	525	1,011
Slight Injuries	1,591	3,034

This would potentially avoid the costs associated with child fatalities, serious and slight injuries and generate annual savings from 350 billion baht to 669 billion baht as shown in Table 19 below.

Table 19: Avoided Costs of Child Fatalities, Serious and Slight Injuries

Crash Severity	Cost (baht) based on official data	Cost (baht) based on WHO estimations
Fatalities	217,937,796	414,613,368
Serious Injury	77,187,075	148,640,253
Slight Injury	55,304,751	105,464,874
Total	350,429,622	668,718,495

Summary of Costs and Benefits

The cost of identifying high risk areas and the design, manufacture, installation of warning signs is estimated at about 330 million baht. This would be a one-off cost with minimal ongoing maintenance costs to replace worn and broken signs.

There is a degree of uncertainty as to whether the warning signs in high risk areas would deliver a 20 percent reduction in child fatalities and injuries given that the actual location of child fatalities and injuries is unknown.

Given that the potential benefits are in the order from 350 million baht to 669 million baht per annum, this option has a greater probability to deliver a net benefit even if a 10 percent reduction was only achieved.

Comparison of Options

Option 1 generates a net cost to the community based on the data that can be quantified. It is likely that the costs would be even greater if all of the costs could be quantified. Option 1 also identified several unintended impacts, particularly on early child development for families with limited access to public transport and low income families that might not be able to afford public transport.

Option 2 was not measured due to the inadequate data on the likely number of child fatalities and injuries in high risk areas.

Option 3 generates a net benefit but only achieves a potential 20 percent reduction in the number of child fatalities and injuries.

None of the options solely address the problem completely and deliver a net benefit. Further studies should be undertaken particularly into high risk areas to ascertain whether there is a positive correlation between these areas with a history of multiple accidents and most child fatalities and injuries incurred on a motorcycle.

Consultation

Asia Injury Prevention Foundation
Office of the Consumer Protection Board
Save the Children Thailand
Royal Automobile Association of Thailand
Royal Thai Police
Thailand Accident Research Center (TARC)
Universities

Save the Children Thailand

In response to the recent proposed ban on young children riding on motorcycles, Save the Children calls for the government's attention to children below the age of two to not be allowed on motorcycles. In addition, Save the Children urges the government, and the police, to enforce the existing helmet law for all passengers, particularly all children, 2 years old and up.

With an estimated 1.3 million children in Thailand traveling on motorcycles, the Thai government has legislated that all people - including children - are required to wear a safety helmet at all times. Still, many child passengers are often seen without helmets - only 7% of children in Thailand currently wear helmets while riding motorcycles. This leads to devastating results - approximately 2600 children are killed, and more than 72,000 are injured, every year in road crashes.

Save the Children recommends that children under two should not ride motorcycles because they are at high risk of long-lasting injuries since they cannot wear helmets safely. Save the Children also recommends that children under five only ride motorcycles under close supervision of an adult.

Currently, there are no regulations by the Thai government on this matter. There is a law, however, that requires all passengers and drivers to wear helmets at all times.

Allison Zelkowitz, Save the Children in Thailand Country Director, explains, "At such a young age of two and below, children have insufficient muscle strength to support the weight of a helmet - they are more prone to injuries and should not be allowed on motorcycles at all. Children between 2 to 5 years should only ride in front of an adult, and must always wear a child-sized helmet that fits properly,

and is fastened tightly."

Save the Children seeks to minimize road crash risks to children through awareness building, education, enforcement and preventative tools and equipment to ensure safety and negate unnecessary exposure to harm.

"In Thailand, motorcycles are important in providing children access to schools and health facilities, but safety must always be the first concern." says Allison.

Save the Children also recommends the use of alternate forms of transportation for young children. These include public buses, subways, tricycles (tuk-tuks), taxis and public mini-vans.

Save the Children in Thailand is currently partnering with the Asia Injury Prevention Foundation in a collaborative effort called "The 7% Project," which aims to decrease motorcycle death and injury among Thai children by increasing helmet use from 7% to 60% by 2017.

Appendices

Appendix 1:

Study Area	Fatalities	Serious Injuries	Slight Injuries	Property Damage Only	Total
Bangkok	715	8,144	42,707	85,414	136,980
Amnat Charoen	44	757	2,105	4,210	7,116
Ang Thong	67	876	2,460	4,920	8,323
Buri Ram	222	3,021	8,466	16,932	28,641
Chachoengsao	306	2,128	6,187	12,374	20,995
Chai Nat	55	874	2,438	4,876	8,243
Chaiyaphum	95	2,583	7,102	14,204	23,984
Chanthaburi	136	1,723	4,841	9,682	16,382
Chiang Mai	396	5,014	14,094	28,188	47,692
Chiang Rai	287	3,376	9,519	19,038	32,220
Chon Buri	527	8,172	22,797	45,594	77,090
Chumphon	173	1,748	4,965	9,930	16,816
Kalasin	67	1,983	5,441	10,882	18,373
Kamphaeng Phet	117	1,717	4,800	9,600	16,234
Kanchanaburi	192	2,301	6,482	12,964	21,939
Khon Kaen	221	3,699	10,293	20,586	34,799
Krabi	140	1,577	4,458	8,916	15,091
Lampang	155	2,016	5,660	11,320	19,151
Lamphun	52	1,386	3,812	7,624	12,874
Loei	115	1,750	4,884	9,768	16,517
Lop Buri	205	1,800	5,152	10,304	17,461
Mae Hong Son	20	627	1,720	3,440	5,807
Maha Sarakham	51	1,784	4,883	9,766	16,484
Mukdahan	45	790	2,194	4,388	7,417
Nakhon Nayok	50	937	2,600	5,200	8,787
Nakhon Pathom	254	2,929	8,266	16,532	27,981
Nakhon Phanom	54	1,332	3,668	7,336	12,390
Nakhon Ratchasima	516	5,544	15,698	31,396	53,154
Nakhon Sawan	322	2,930	8,369	16,738	28,359
Nakhon Si Thammarat	218	2,238	6,324	12,648	21,418
Nan	75	1,728	4,766	9,532	16,101
Narathiwat	41	1,479	4,047	8,094	13,661
Nong Bua Lamphu	45	854	2,365	4,730	7,994
Nong Khai	106	1,693	4,719	9,438	15,956
Nonthaburi	21	1,892	5,129	10,258	17,300
Pathum Thani	115	1,523	4,273	8,546	14,457
Pattani	34	1,339	3,657	7,314	12,344
Phang Nga	46	1,082	2,985	5,970	10,083
Phatthalung	92	1,426	3,979	7,958	13,455
Phayao	29	828	2,275	4,550	7,682
Phetchabun	198	2,208	6,240	12,480	21,126
Phetchaburi	66	1,756	4,827	9,654	16,303
Phichit	120	1,166	3,317	6,634	11,237
Phitsanulok	227	1,567	4,558	9,116	15,468
Phra Nakhon Si	220	2,699	7,598	15,196	25,713

Ayutthaya					
Phrae	71	1,077	3,006	6,012	10,166
Phuket	152	1,993	5,595	11,190	18,930
Prachin Buri	263	1,687	4,934	9,868	16,752
Prachuap Khiri Khan	205	1,768	5,067	10,134	17,174
Ranong	26	590	1,629	3,258	5,503
Ratchaburi	143	2,979	8,241	16,482	27,845
Rayong	122	2,847	7,851	15,702	26,522
Roi Et	117	2,516	6,950	13,900	23,483
Sa Kaeo	125	1,285	3,648	7,296	12,354
Sakon Nakhon	145	2,115	5,914	11,828	20002
Samut Prakan	113	1,210	3,428	6,856	11,607
Samut Sakhon	205	1,540	4,450	8,900	15,095
Samut Songkhram	15	443	1,217	2,434	4,109
Saraburi	347	3,375	9,603	19,206	32,531
Satun	25	509	1,409	2,818	4,761
Si Sa Ket	69	1,964	5,394	10,788	18,215
Sing Buri	54	766	2,144	4,288	7,252
Songkhla	271	3,677	10,307	20,614	34,869
Sukhothai	100	1,410	3,948	7,896	13,354
Suphan Buri	201	2,499	7,031	14,062	23,793
Surat Thani	285	3,383	9,538	19,076	32,282
Surin	244	2,123	6,079	12,158	20,604
Tak	67	1,372	3,797	7,594	12,830
Trang	108	2,381	6,575	13,150	22,214
Trat	44	845	2,342	4,684	7,915
Ubon Ratchathani	384	4,408	12,444	24,888	42,124
Udon Thani	304	3,127	8,872	17,744	30,047
Uthai Thani	60	955	2,664	5,328	9,007
Uttaradit	65	977	2,731	5,462	9,235
Yala	56	1,251	3,454	6,908	11,669
Yasothon	83	999	2,815	5,630	9,527
Total	11,721	157,057	460,197	920,394	1,549,369

Appendix 2

Appendix 3

Study Area	Population	Fatalities	Per 100,000 Population	Serious Injuries	Per 100,000 population
Bangkok	8,500,000	715	8.4	8,144	96
Amnat Charoen	375,000	44	11.7	757	202
Ang Thong	283,000	67	23.9	876	313
Buri Ram	1,580,000	222	14	3,021	191
Chachoengsao	695,000	**306**	**44**	2,128	306
Chai Nat	332,000	55	16.6	874	265
Chaiyaphum	1,140,000	95	8.3	2,583	227
Chanthaburi	527,000	136	25.6	1,723	325
Chiang Mai	1,700,000	396	23.3	5,014	295
Chiang Rai	1,200,000	287	23.9	3,376	281
Chon Buri	1,400,000	**527**	**37.6**	8,172	584
Chumphon	498,000	173	**34.6**	1,748	350
Kalasin	985,000	67	6.7	1,983	198
Kamphaeng Phet	729,000	117	16	1,717	235
Kanchanaburi	848,000	192	22.6	2,301	271
Khon Kaen	1,800,000	221	12.3	3,699	205
Krabi	457,000	140	**30.4**	1,577	343
Lampang	753,000	155	20.6	2,016	269
Lamphun	405,000	52	13	1,386	346
Loei	634,000	115	18	1,750	278
Lop Buri	758,000	205	27	1,800	237
Mae Hong Son	248,000	20	8	627	251
Maha Sarakham	960,000	51	5.3	1,784	186
Mukdahan	346,000	45	13	790	226
Nakhon Nayok	257,000	50	19.2	937	360
Nakhon Pathom	891,000	254	28.5	2,929	329
Nakhon Phanom	713,000	54	7.6	1,332	188
Nakhon Ratchasima	2,620,000	516	19.7	5,544	212
Nakhon Sawan	1,073,000	322	**30**	2,930	274
Nakhon Si Thammarat	1,5000,000	218	14.5	2,238	149
Nan	478,000	75	15.6	1,728	360
Narathiwat	775,000	41	5.3	1,479	192
Nong Bua Lamphu	509,000	45	9	854	171
Nong Khai	517,000	106	20.4	1,693	326
Nonthaburi	1,174,000	21	1.8 *	1,892	162
Pathum Thani	1,074,000	115	9.8	1,523	130
Pattani	686,000	34	5	1,339	197
Phang Nga	261,000	46	17.7	1,082	416
Phatthalung	520,000	92	17.7	1,426	274
Phayao	484,000	29	6	828	172
Phetchabun	995,000	198	19.8	2,208	221
Phetchaburi	474,000	66	14	1,756	374
Phichit	547,000	120	21.8	1,166	212
Phitsanulok	851,000	227	26.7	1,567	184
Phra Nakhon Si Ayutthaya	803,000	220	27.5	2,699	337
Phrae	454,000	71	15.8	1,077	239
Phuket	378,000	**152**	**40**	1,993	524

Prachin Buri	479,000	**263**	**54.8**	1,687	351
Prachuap Khiri Khan	525,000	**205**	**39.4**	1,768	340
Ranong	177,000	26	14.4	590	328
Ratchaburi	842,000	143	17	2,979	355
Rayong	674,000	122	18.2	2,847	425
Roi Et	1,3000,000	117	9	2,516	194
Sa Kaeo	552,000	125	22.7	1,285	234
Sakon Nakhon	1,140,000	145	12.7	2,115	185
Samut Prakan	1,262,000	113	9	1,210	96
Samut Sakhon	532,000	**205**	**38.7**	1,540	291
Samut Songkhram	194,000	15	7.9	443	233
Saraburi	633,000	**347**	**55**	3,375	536
Satun	313,000	25	8	509	164
Si Sa Ket	1,465,000	69	4.7	1,964	134
Sing Buri	212,000	54	25.7	766	365
Songkhla	1,400,000	271	19.3	3,677	263
Sukhothai	602,000	100	16.6	1,410	235
Suphan Buri	849,000	201	23.6	2,499	294
Surat Thani	1,000,000	285	28.5	3,383	338
Surin	1,400,000	244	17.4	2,123	152
Tak	539,000	67	12.4	1,372	254
Trang	638,000	108	16.9	2,381	372
Trat	225,000	44	20	845	384
Ubon Ratchathani	1,845,000	384	20.9	4,408	240
Udon Thani	1,570,000	304	19.3	3,127	199
Uthai Thani	330,000	60	18.2	955	289
Uttaradit	460,000	65	14	977	212
Yala	512,000	56	11	1,251	245
Yasothon	540,000	83	15.4	999	185
Total	67,397,000	11,721		157,057	