A TECHNICAL GUIDE

TO ASSIST THE DEVELOPMENT AND IMPLEMENTATION OF A MOTORCYCLE HELMET STANDARD

IN LOW- AND MIDDLE- INCOME COUNTRIES

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GLOBAL ROAD SAFETY PARTNERSHIP

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Glossary

Advanced driver assistance system (ADAS)
A technology that assists drivers with the safe operation of a motor vehicle.

Certified helmet
A helmet that has been tested and meets all the criteria of a specific helmet standard.

Commercial motorcycle rider
Any motorcycle rider that uses his or her motorcycle to earn income. This may include courier services, food delivery services as well as ride share services.

CSO
Civil Society Organisation.

e-bike
A pedal cycle equipped with an electric motor that may be activated in order to assist with or replace pedaling.

Fake helmet / Counterfeit helmet
A helmet that has been produced to look like a genuine helmet but does not provide the same protection as the original and does not meet any international helmet standard.

GRSP
Global Road Safety Partnership.

Harmonisation
The goal of harmonisation is to have every country in a region use the same standard or at least agree that their individual standards are equivalent.

Law / legislation
Refers to any document that is legally binding and can include, for example, laws enacted by a parliament or legislative body, regulations or rules enacted by Minister(s) or executive bodies, circulars, protocols, and any other legally binding document issued by authorised entities at international, national or sub-national levels.

LMIC
Low- and middle-income countries.

Novelty helmet
A fake or counterfeit helmet that offers little or no protection to the wearer and is offered for sale as a toy or decorative item.

PTW
powered two-wheeler.

Road Policing Agency
An agency or organisation responsible for enforcement of traffic laws by the detection and deterrence of illegal and dangerous activities on public roadways.

Unqualified helmet /Uncertified helmet
A helmet that does not meet any international helmet standard.

Executive Summary

A certified motorcycle helmet designed specifically for use by motorcycle riders and passengers is a critical component of improving road safety in every country. Research has shown that motorcycle helmets certified to an international safety standard will significantly reduce the risk of head injuries and fatalities in motorcycle crashes. The development and implementation of a national motorcycle helmet standard and motorcycle helmet wearing legislation are key safety countermeasures that have proven benefits in terms of reduction of the frequency and severity of motorcycle-related death and head injury. However, achieving widespread helmet use requires concerted efforts from multiple stakeholders, many of which are not traditionally involved in road safety matters. This guide outlines the need for motorcycle helmets, how they work and the process of developing a motorcycle helmet standard. It also provides information about the steps for effective implementation of the standard and identifies resources and potential opportunities for advocacy efforts. Importantly, this guide complements the best practice manual for decision-makers and practitioners on helmets, published by the World Health Organization (2023).

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How to use this guide

While there is a global common goal of reducing the frequency and severity of road crashes, no two countries or regions are identical. Each country has its own regulations and political, administrative, financial and environmental challenges. Each country also has unique resources and needs for the development and implementation of a motorcycle helmet standard. Similarly, countries are often at different stages in the implementation of their overall road safety programme or strategy. For instance, one country may not have legislation on helmet use, another country may have legislation without a motorcycle helmet standard, while another may have both legislation and a motorcycle helmet standard, though neither may have been fully implemented.

This guide is intended to help countries seeking to develop a motorcycle helmet standard (see module 4), as well as countries and regions that have developed their own motorcycle helmet standard and seek to address the issue of implementation. A flowchart outlining the steps necessary to implement a published motorcycle helmet standard is shown in Figure 1. Reading all the modules in this guide will provide a comprehensive summary of all the steps necessary to fully develop and implement a motorcycle helmet standard; however, readers are encouraged to go directly to those modules that are most relevant to their needs.

Improving road safety involves advocacy and stakeholder engagement. This guide aims to help identify those areas where advocacy can support the process of developing and/or implementing a motorcycle helmet standard. For example, areas highlighted in orange in Figure 1 represent opportunities for advocacy groups to get involved at an early stage of the process. For each topic area or task, a list of objectives and tasks are provided, potential stakeholders are identified along with case studies to provide background and resources based on the experiences of others who have faced similar challenges. In this way, the guide is intended to provide background, guidance and suggestions about how to get involved and meet the challenges of improving road safety in a country or region.

In this guide, any reference to "law" or "legislation" should be understood broadly as covering any document that is legally binding. It includes, for example, laws enacted by the parliament (or legislative body), regulations or rules enacted by Minister(s) (or executive bodies), circulars, protocols and any other legally binding document issued by authorised entities at international, national or subnational levels.

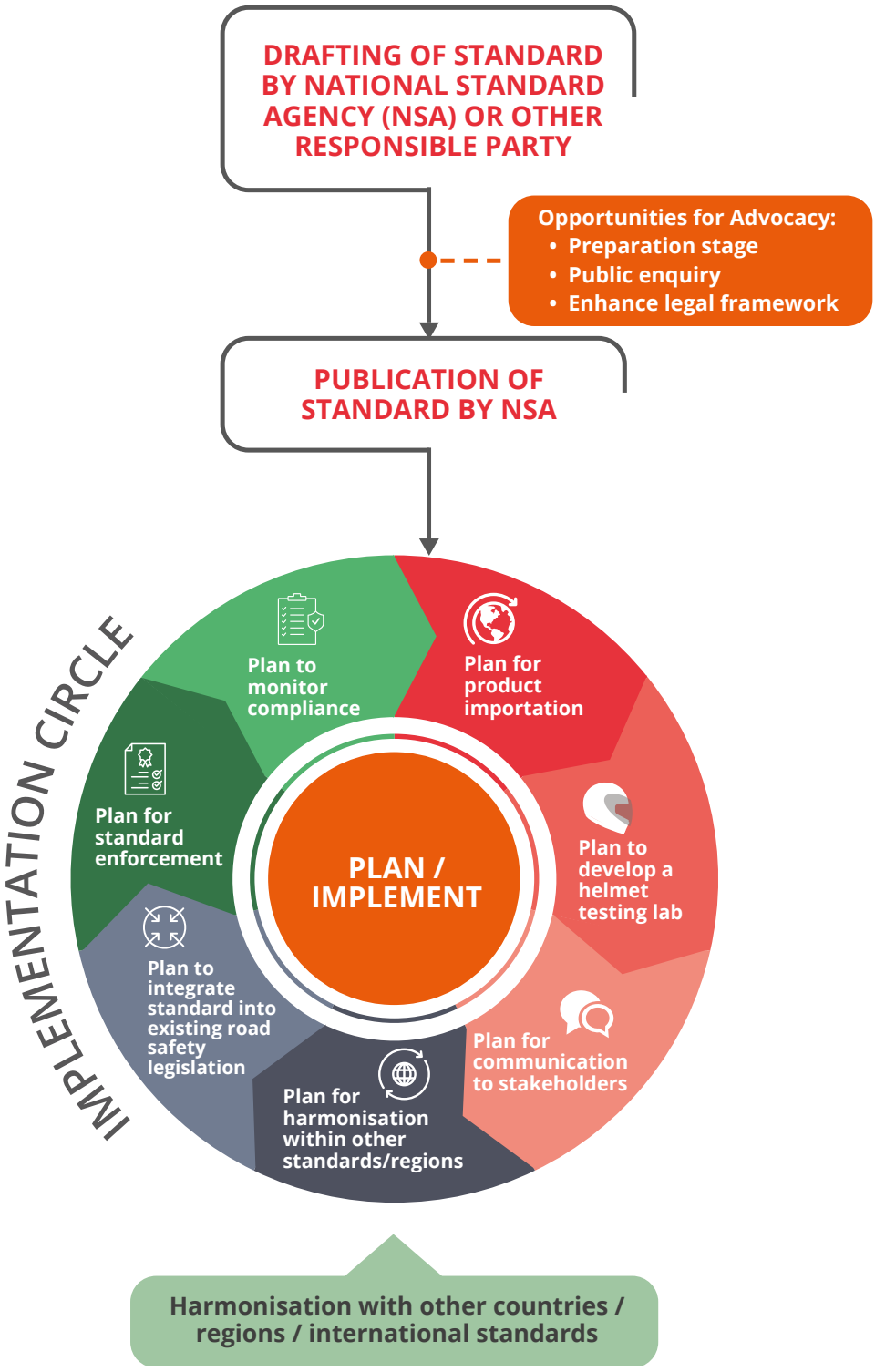

Figure 1.
Flowchart of steps to develop and implement a helmet standard

MODULE 1: Background

The World Health Organization (WHO) estimated that there were

1.19 MILLION

road traffic deaths in 2021

Approximately **21%** of those fatalities involved powered **TWO OR THREE-WHEELED VEHICLES (PTW).**

TRAFFIC FATALITIES are the **leading cause of death** for children and young adults aged

5 - 29 YEARS

IN TERMS OF GLOBAL FATALITIES, ROAD TRAFFIC DEATHS ARE THE

8th leading cause of death globally across all age groups[1]

low- and middle- income countries (LMICs) bear a disproportionately high burden of fatalities.

Global use of motorcycles as a mode of transport

The global motorcycle market has seen significant growth, driven by rising demand for affordable and efficient transportation, particularly in urban areas of low- and middle-income countries (LMICs). Motorcycles are often luxury items in high-income countries. However, in LMICs, they provide essential transport and livelihood opportunities, such as motorcycle taxis and delivery services. The increasing popularity of electric motorcycles, supported by government initiatives, is expected to further accelerate growth, particularly in sub-Saharan Africa, where electric vehicles could make up 35% of the fleet by 2040. Asia dominates the market, with countries like India, China, and Indonesia leading motorcycle sales, but also experiencing high rates of motorcycle-related fatalities (see Figure 2).

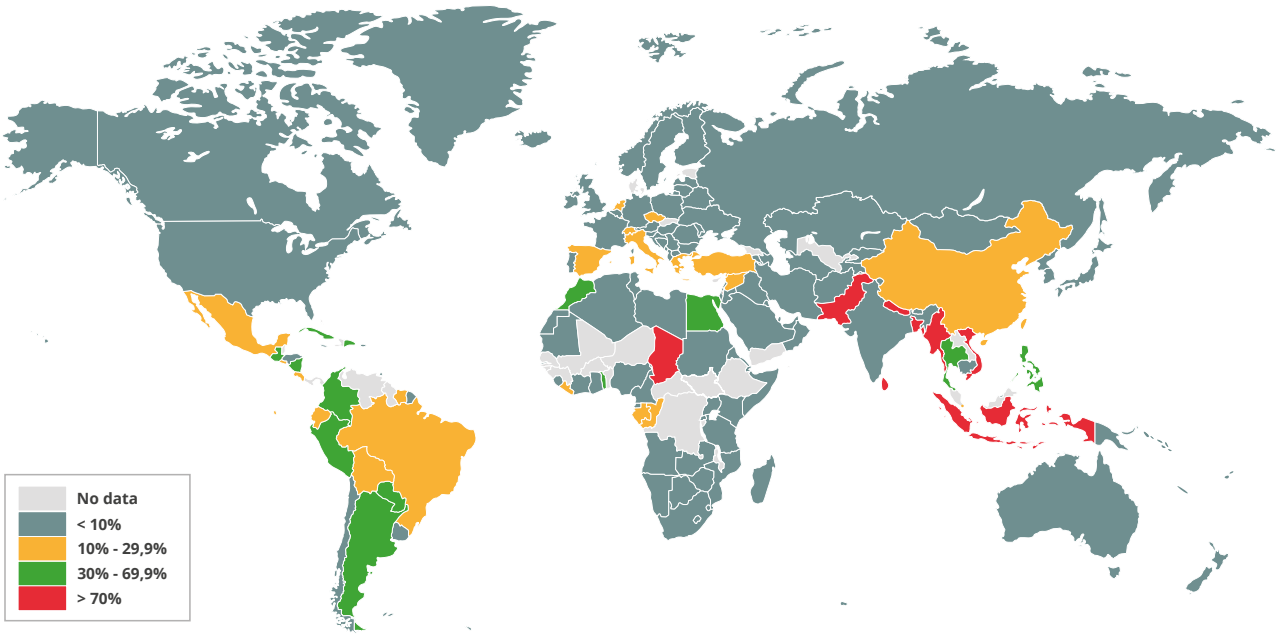

Figure 2.
Percentage of PTW fatalities relative to all registered vehicles (source: WHO Global Status Report on Road Safety, 2023)

The e-bike market is also expanding rapidly, offering an eco-friendly and cost-effective alternative to cars. With an estimated global value of $50.1 billion USD in 2024, the market is projected to grow to $148.7 billion USD by 2032, driven by rising fuel costs, government incentives, and improved infrastructure, particularly in the Asia Pacific region[2]. However, two-wheelers, including motorcycles and e-bikes, pose significant safety risks. Riders face a much higher likelihood of fatal or serious injuries compared to car occupants[3], highlighting the need for improved safety technologies and regulations, such as Advanced Driver Assistance Systems (ADAS)[4] and helmet standards, to protect vulnerable riders.

1 Denotes references located at the end of this document.

Head injuries and helmet-wearing

PTW riders have little or no protection when involved in a crash. A hospital-based study from Western Kenya found that 42% of admitted PTW riders had head injuries[5]. More information from across Kenya can be found in the Case Study box below. In Vietnam, head injuries accounted for 70% of motorcycle-related hospitalisations[6], while in Taiwan, and China, 82% of head injuries were linked to road traffic crashes, 71% of which involved motorcycle riders[6]. A review of PTW injury risks shows that most fatal injuries are to the head, even among helmeted riders[7]. Even when not fatal, head trauma can result in brain injuries, leading to permanent disability, impaired brain function, difficulties with physical activities, loss of income, reduced employability, and lifelong medical expenses[8,9].

CASE STUDY

THE HIGH COST OF HEAD INJURIES IN KENYA

The use of motorcycle taxis, or bodabodas is growing rapidly throughout low- and middle-income countries. Research collected in Kenya found that 63% of bodaboda riders and only 15% of passengers were wearing a helmet at the time of the crash. Thirty-five percent of those riders admitted to hospital had sustained a head injury, and the average hospital stay for many of these patients was 18.12 days. In addition to the loss of household income for the injured rider or passenger, the cost for surgical intervention for these head injury cases can be more than $20K USD. While some patients may have National Health Insurance that pays for some or all of their medical costs, patients are required in most cases to pay the full costs of their medical care before being discharged. This puts a tremendous burden on families that have someone involved in a motorcycle crash.

For further information:

- Nyachieo, G., Wandera, V., Peden, M., Clark, S. *A fare price: an investigation into the health costs of motorcycle taxi crashes in Kenya*. FIA Foundation, 2024.
- FIA Foundation.

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This injury trend does not only occur with motorcycles. Research performed in the United States highlighted that e-bike injuries increased by 30 times from 2017 to 2022, with hospitalisations rising by 43 times. The most alarming finding was the rise in head injuries among e-bike riders, especially given the decrease in helmet usage[10]. Similar alarming results were found in China, where, according to police data, e-bike riders accounted for 13.8% of all road traffic deaths and 17.4% of road traffic injuries in 2019. Head injuries were the leading cause of death (75%) and severe injuries (80%) among e-bike riders in China[11].

Research has shown that as the use of PTWs and e-bikes increases, especially in LMICs, the adoption of lifesaving helmets often lags behind. Wearing a properly fastened, certified motorcycle helmet can reduce the risk of death by more than six times and reduce the risk of brain injury by up to 74%[12]. Many countries do not have a national motorcycle helmet law, and others have not included a national motorcycle helmet standard in national road safety legislation (see Figure 3 and Figure 4). However, these are important pre-requisites for reducing the severity and frequency of head injuries due to motorcycle crashes. In addition, the lack of availability and affordability of certified motorcycle helmets, the use of improperly fastened helmets, and the lack of certified helmets for children all add to the challenge of promoting safe use of PTWs[13].

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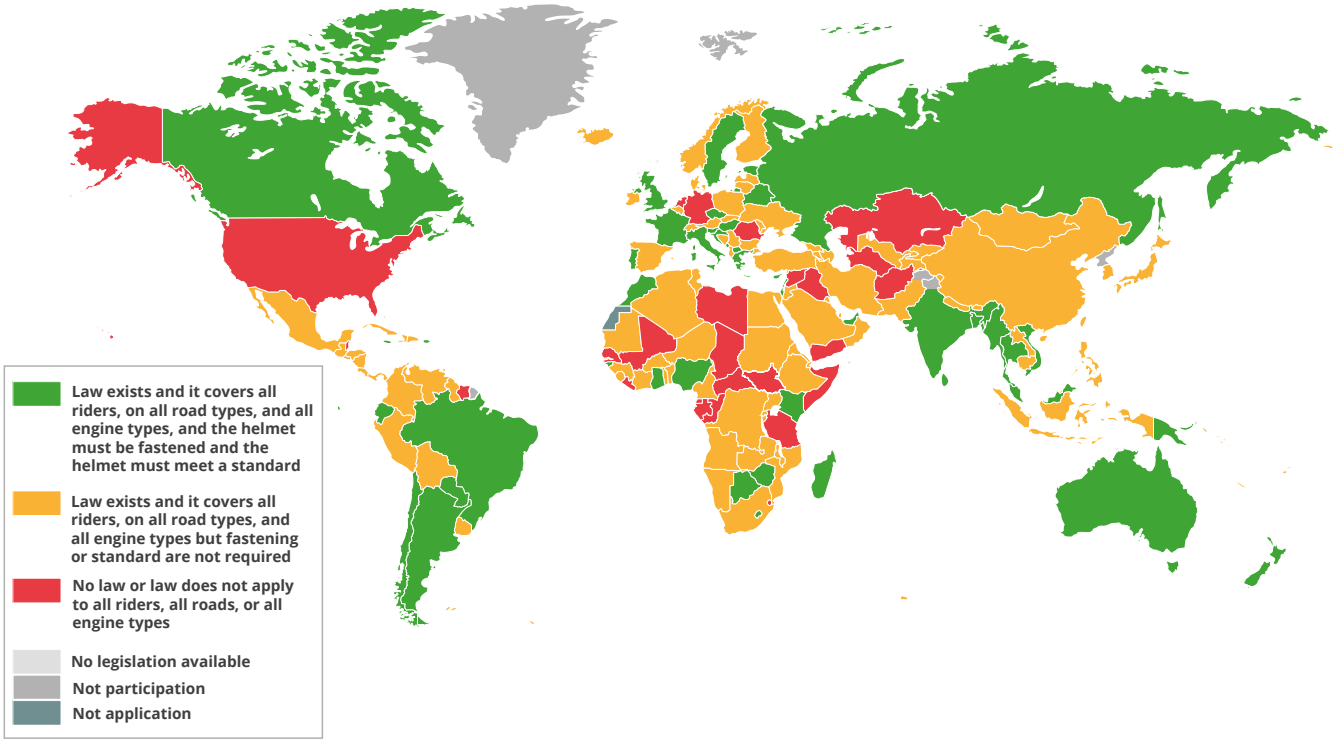

Figure 3.
Status of motorcycle helmet laws in countries, 2022
(source: WHO Global Status Report on Road Safety, 2023)

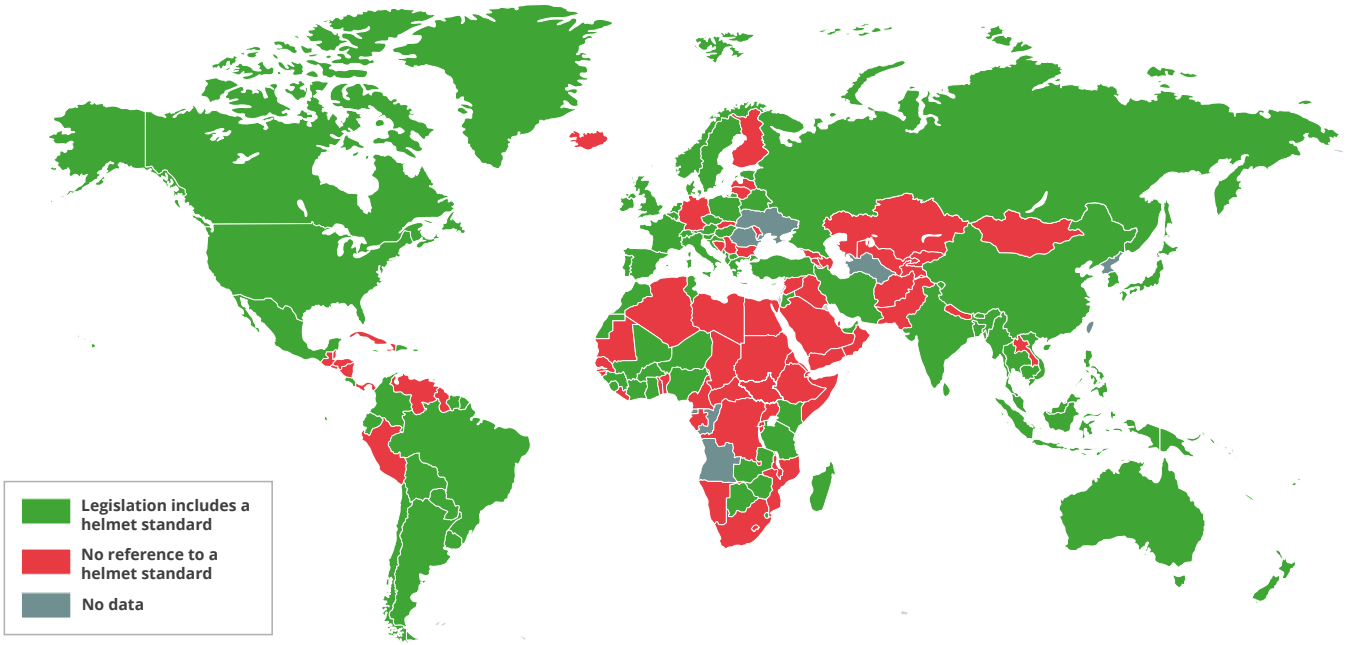

Figure 4.
Status of legislation that refers to a specific helmet standard in countries
(source: WHO Global Status Report on Road Safety, 2023)

Children on motorcycles

While many countries have specific age limits for child passengers on a motorcycle (see Figure 5), the reality in many LMICs is that children, and often whole families, will ride on a PTW because it is the only form of transport available. As noted above, the availability of certified motorcycle helmets for children is often extremely limited and often exacerbated by misinformation related to helmet-related injuries in children[13].

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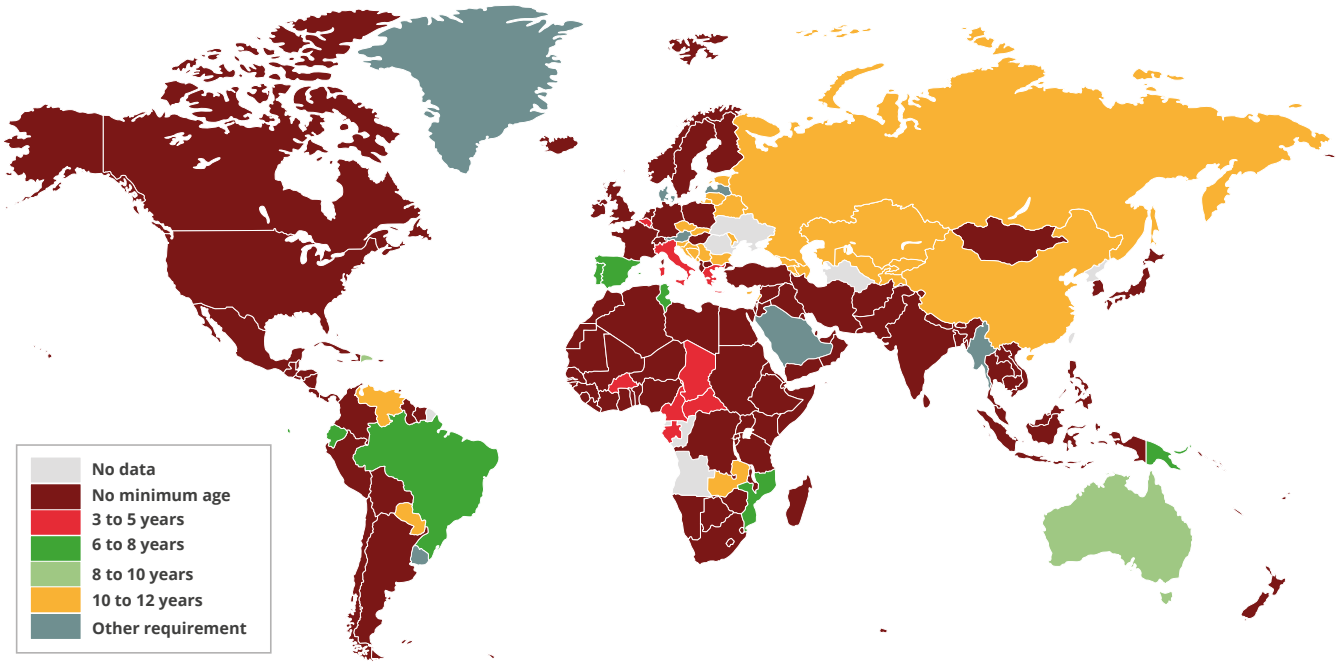
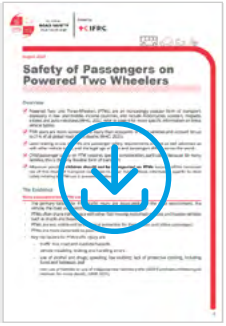


Figure 5.
Minimum age that children are allowed as passengers on a motorcycle, by country. Source: WHO Global Status Report on Road Safety 2023.

ONLINE RESOURCES

More information on PTW passenger safety can be found in the GRSP Fact Sheet, freely available from the GRSP Publications website.

► ***SAFETY OF PASSENGERS ON POWERED TWO WHEELERS***



MODULE 2: Why are helmets important and how do they work?

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Motorcycle helmets are crucial safety gear for all motorcycle riders and passengers. Research has shown that their use can significantly reduce the economic burden of motorcycle-related head injuries on a national health system[14]. They cannot prevent all types of head injuries, especially those resulting from high-speed or severe impacts. However, when fitted and worn properly, they offer significant protection against all types of head injuries. A systematic review indicated that appropriate use of motorcycle helmets will reduce the risk of head injury by approximately 72%[12]. As can be seen from the information presented in Figure 6, the use of a motorcycle helmet, in the majority of outcome measures, led to reduced injury or fatality risk when compared with those not wearing a helmet[15].

By choosing a motorcycle helmet that meets a nationally recognised safety standard and ensuring that the helmet is properly fitted, fastened, and maintained, riders can significantly reduce the risk of head injuries. High quality, highly visible (white or brightly coloured) full-face helmets have the highest safety value. Additionally, high visibility protective clothing, including hand and foot protection, should be used at all times by all[16].

How a Motorcycle Helmet Works

Motorcycle helmets are designed based on principles of physics, engineering and material science to mitigate the effects of impacts. In order to understand how a motorcycle helmet works, it is important to first understand the basic mechanics of head injury.

Head injuries in motorcycle crashes can result from direct impacts to the head and rotational forces applied to the head, or most often, a combination of both. Direct impacts can cause skull fractures, while rotational forces can lead to brain injuries such as concussions and contusions[17]. Helmets are designed to absorb and dissipate the energy from an impact, thus reducing the forces transmitted to the head and brain. The key factors that influence head injury during a crash include:

- the impact velocity and the direction of that velocity
- the geometry and surface area of the object struck
- the duration of the impact
- the helmet design and the materials available to absorb impact energy.

The main components of the helmet design include the outer shell, an energy absorbing liner, comfort padding and the retention system or chin-strap (see Figure 7).

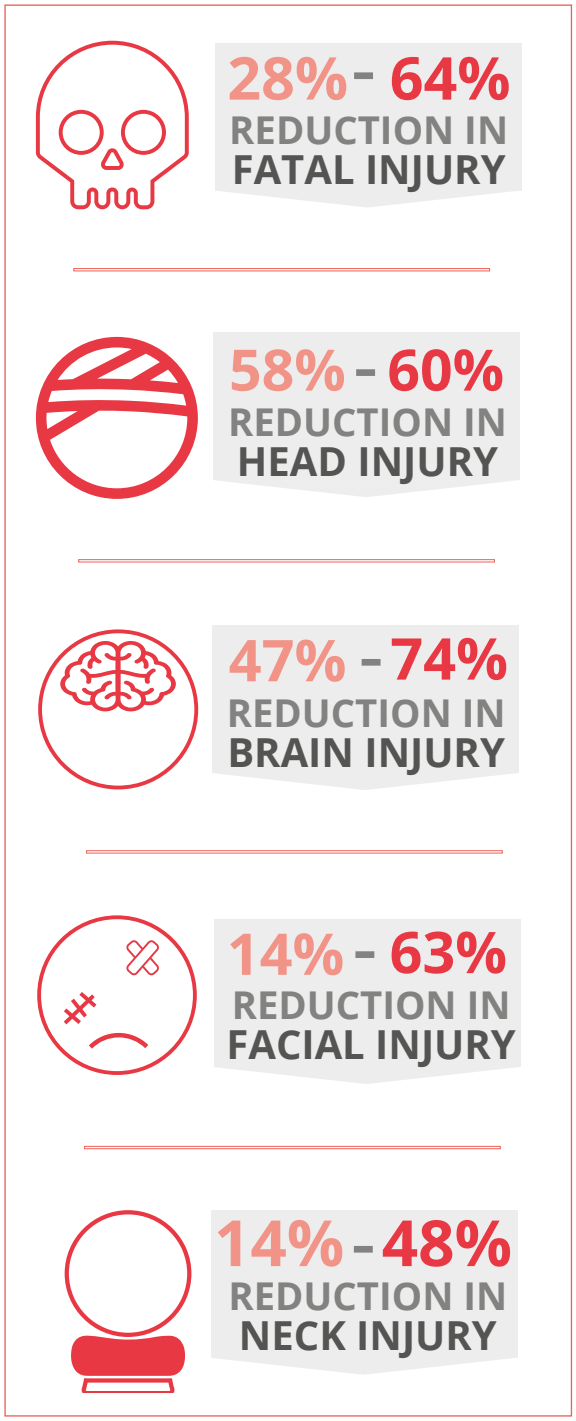


Figure 6.
Estimate of Injury Reduction While Wearing a Helmet (source: reference 15)

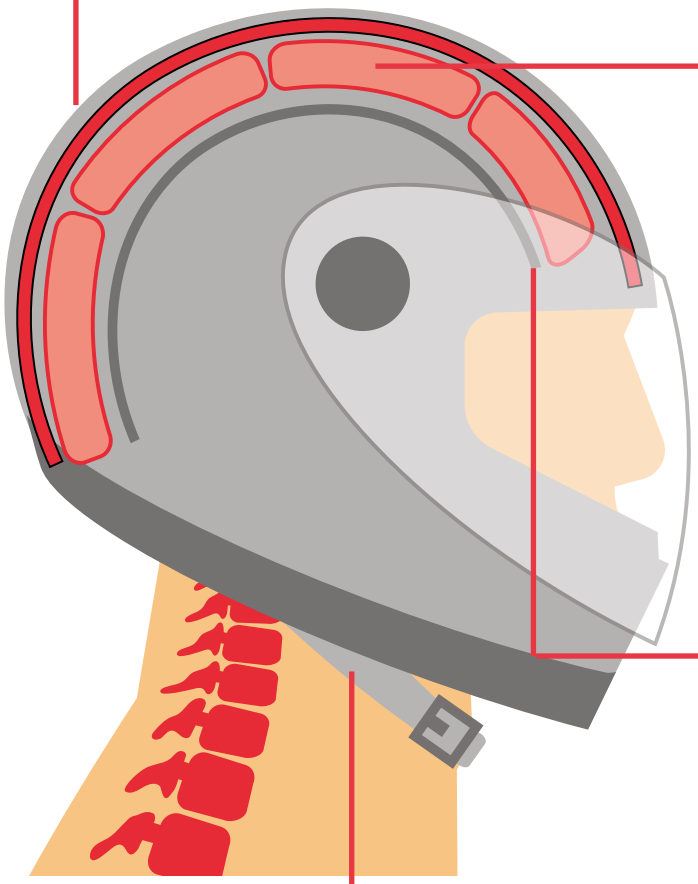
ONLINE RESOURCES

More information on this topic can be found in ***HELMETS: A ROAD SAFETY MANUAL FOR DECISION-MAKERS AND PRACTITIONERS, SECOND EDITION (2023)***.

Freely available from the GRSP Publications website.

Outer shell:

- fabricated from polycarbonate, acetyl butadiene styrene (ABS), fiberglass or a composite material made with carbon fiber or other materials.
- all materials function in the same manner by providing a hard, smooth surface that distributes impact forces to a wide area of energy absorbing liner underneath the shell.
- prevents direct contact to that area of the head covered by the helmet shell.



Energy absorbing liner:

- most often made of expanded polystyrene (EPS); expanded polypropylene (EPP) or some other energy absorbing material.
- finite element modelling and three-dimensional printing has offered new highly engineered materials and structural forms that can be custom printed to fit the wearer's head[18].
- no matter which energy absorbing material is chosen, it protects the wearer by compressing and crushing to absorb the energy from the impact which significantly reduces the magnitude of forces transmitted to the head.

Comfort padding:

- added to the interior of the energy absorbing liner to improve comfort and fit of the helmet.
- provides little, if any, energy absorbing capabilities and therefore should not be mistaken for an energy absorbing liner.

Retention system:

- ensures the helmet remains securely fastened during impact, preventing it from coming off and exposing the wearer to significant head injury risk due to direct head impact.
- traditional retention systems typically include some type of webbing with a fastening mechanism that may be a d-ring coupling or some type of quick release buckle or latch system.

Figure 7.
Main components of a motorcycle helmet

A national motorcycle helmet standard includes performance specifications and test procedures for the evaluation of each one of the helmet components outlined above, thereby assuring the rider of a maximum level of safety during a crash.

Motorcycle Helmet Types

As motorcycle helmet design has evolved, various helmet types or styles have been developed, each with unique design features and intended use. A brief description of the different types of motorcycle helmets, their characteristics, advantages and disadvantages is presented in Figure 8.

HALF HELMETS

- Also known as partial coverage helmets
- Lightweight and minimal in design
- Popular among riders who don't want to wear a motorcycle helmet
- Do not meet the minimum coverage requirements of some motorcycle helmet standards (e.g. UN/ECE 22).
- Provide the least amount of protection

OPEN-FACE OR THREE-QUARTER HELMETS

- Often considered the "classic" motorcycle helmet style
- Cover the top, sides and rear of the head but leave the face exposed
- Offer good ventilation and visibility, but lack any type of facial protection
- Expose the eyes and face to insects and environmental conditions while riding, and to possible serious maxillo-facial injury during a facial impact.

OFF-ROAD AND DUAL-SPORT HELMETS

- Designed primarily for off-road activities
- Lightweight with good airflow and a larger facial opening designed to accept goggles
- In most countries, it must meet the same performance specifications as traditional full-face helmets
- In most countries, it is legal to use an off-road helmet on a public road. However, due to its lighter design, it can create a very noisy and annoying experience for the wearer, especially when travelling at higher speeds such as on motorways.

MODULAR HELMETS

- Known as flip-up helmets, combining the features of a full-face and an open-face helmet.
- Hinged chin bar can be flipped up, allowing riders to easily eat, drink, or communicate without removing the entire helmet
- May be heavier than a fullface helmet due to the chin bar mechanism and hardware.
- May not offer the same level of protection as a full-face helmet during a facial impact.

FULL-FACE HELMETS

- Provides the most comprehensive coverage, protecting the entire head including the face and chin
- When compared to other helmet types, research has shown that this type of helmet provides the greatest level of protection against head and neck injury during a motorcycle crash.
- Offers excellent protection against impacts, flying insects, road debris and weather elements.
- Provides good aerodynamics and reduced wind noises
- Disadvantage: can make some riders feel claustrophobic and when worn in tropical climates, can make the head very hot and uncomfortable.

LOWEST TO HIGHEST PROTECTION

Helmet quality varies widely and counterfeit, poor quality helmets are not uncommon

Over 30% of motor cyclist head impacts occur to the facial area

Figure 8.
Motorcycle Helmet Types and Characteristics

In summary, helmets come in various styles, each offering a unique balance of protection, comfort and style. Full-face, modular and off-road helmets provide the highest level of protection because they cover the entire head and facial region. Modular helmets offer versatility and convenience but less protection when used with the chin bar in the "up" position.

Open-face helmets combine protection with a classic motorcycle riding look and half helmets offer a minimalist style with minimal protection. Both of these types of helmets do not cover the face, thus increasing the risk of facial injury. Choosing the right helmet type depends on individual preferences and sometimes the national motorcycle helmet standard. Ultimately, the objective is to convince the public of the importance of always wearing a helmet with the greatest level of protection possible to reduce the risk of death and serious injury as the result of a crash. The availability of different motorcycle helmet styles and designs maximises choices available to all riders and passengers.

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Unqualified, Novelty or Fake Motorcycle Helmets

Certified motorcycle helmets are effective in reducing the frequency and severity of head injuries. Unfortunately, as with many consumer products, there is an extremely popular market for counterfeit or fake helmets that do not meet any safety helmet standard, also known as unqualified or uncertified helmets. These helmets are often counterfeit replicas of genuine helmets. However, they are often made from substandard materials and lack the necessary features for adequate head protection. They do not have any standard certification, usually lack any proper labelling or marking, and are often missing a critical safety feature such as an energy absorbing liner or an effective retention system. Fake helmets are usually cheaper than genuine helmets, making them extremely attractive to budget-conscious riders.

Wearing an unqualified motorcycle helmet can increase the risk of serious head injuries and fatalities in crashes[19]. Unqualified helmets lack the energy absorbing materials and structural integrity of genuine motorcycle helmets, making them ineffective at protecting riders' heads. In addition, they often have an extremely poor retention system that will fail to keep the helmet on the head during a crash, thus exposing the rider to injury.

To address the issue of unqualified helmets, governments, helmet manufacturers and motorcycle rider advocacy groups have taken various measures to educate consumers and enforce safety standards. These efforts aim to raise awareness about the dangers of fake helmets, promote the use of genuine certified helmets, and reduce the number of unqualified products on the market. The Case Study from Mexico provides more information on this issue.

CASE STUDY

MEXICO CAMPAIGN TO IMPROVE AWARENESS OF THE IMPORTANCE OF WEARING A QUALIFIED MOTORCYCLE HELMET

In October 2023, a situational awareness study conducted in Mexico by the Institute for Transport and Development Policy (ITDP) determined that motorcycle injuries and fatalities in Mexico had been rising significantly. In 2020, motorcycles accounted for 25% of all fatalities from traffic crashes. Given that the use of approved helmets is an effective measure to prevent deaths and injury to motorcycle users, the ITDP, with the support of the FIA Foundation and other organisations, formed a Helmet Coalition with the goal of promoting a series of multi-sectorial actions to improve road safety in the region.

One such action was a helmet market study in Mexico which found that about 45% of people were not wearing helmets, and those that were wearing helmets were often wearing a damaged or non-certified motorcycle helmet. When this issue was explored in greater detail, it was found that many people had purchased a low-cost helmet believing that they were getting adequate protection when in fact they were wearing an uncertified helmet that offered very poor protection compared to a certified motorcycle helmet.

In order to improve awareness, the coalition developed the following campaign to improve awareness of wearing a properly fitted and properly retained certified motorcycle helmet.

MODULE 3: Motorcycle helmet standards

Motorcycle helmet standards are critical for ensuring that a helmet will provide adequate protection to the wearer during a crash. A motorcycle helmet standard provides confirmation of the following:

1 **SAFETY:**
A motorcycle helmet standard ensures that all helmets in compliance with the standard will meet all minimum safety requirements, including coverage, impact absorption, helmet stability, and retention system effectiveness. These elements are all crucial to providing head protection in the event of a crash.

2 **QUALITY:**
A motorcycle helmet standard encourages manufacturers to produce high quality helmets that undergo regular and rigorous testing, resulting in better overall performance and durability.

3 **CONSUMER CONFIDENCE:**
A motorcycle helmet standard provides consumers with confidence that the certified helmet they purchase has been tested and meets the established safety criteria.

4 **LEGAL COMPLIANCE:**
A motorcycle helmet standard forms the basis for legislative requirements regarding helmet use, ensuring that riders comply with the safety regulation. In addition, a motorcycle helmet standard provides government agencies and law enforcement with a confirmation of compliance to the legislation.

Background to the development of helmet standards

The development of motorcycle helmets can be traced back to the early 20th century when helmets were first introduced as a means of protecting riders from head injuries. Early helmet designs were primitive and offered limited protection. It was not until the mid-20th century that motorcycle helmet standards and regulations began to emerge. Figure 9 contains information about the timeline of several key motorcycle helmet standards development. Appendix A contains a full list of Standards mentioned in this document. Figure 10 depicts various certifications stickers for some international motorcycle helmet standards.

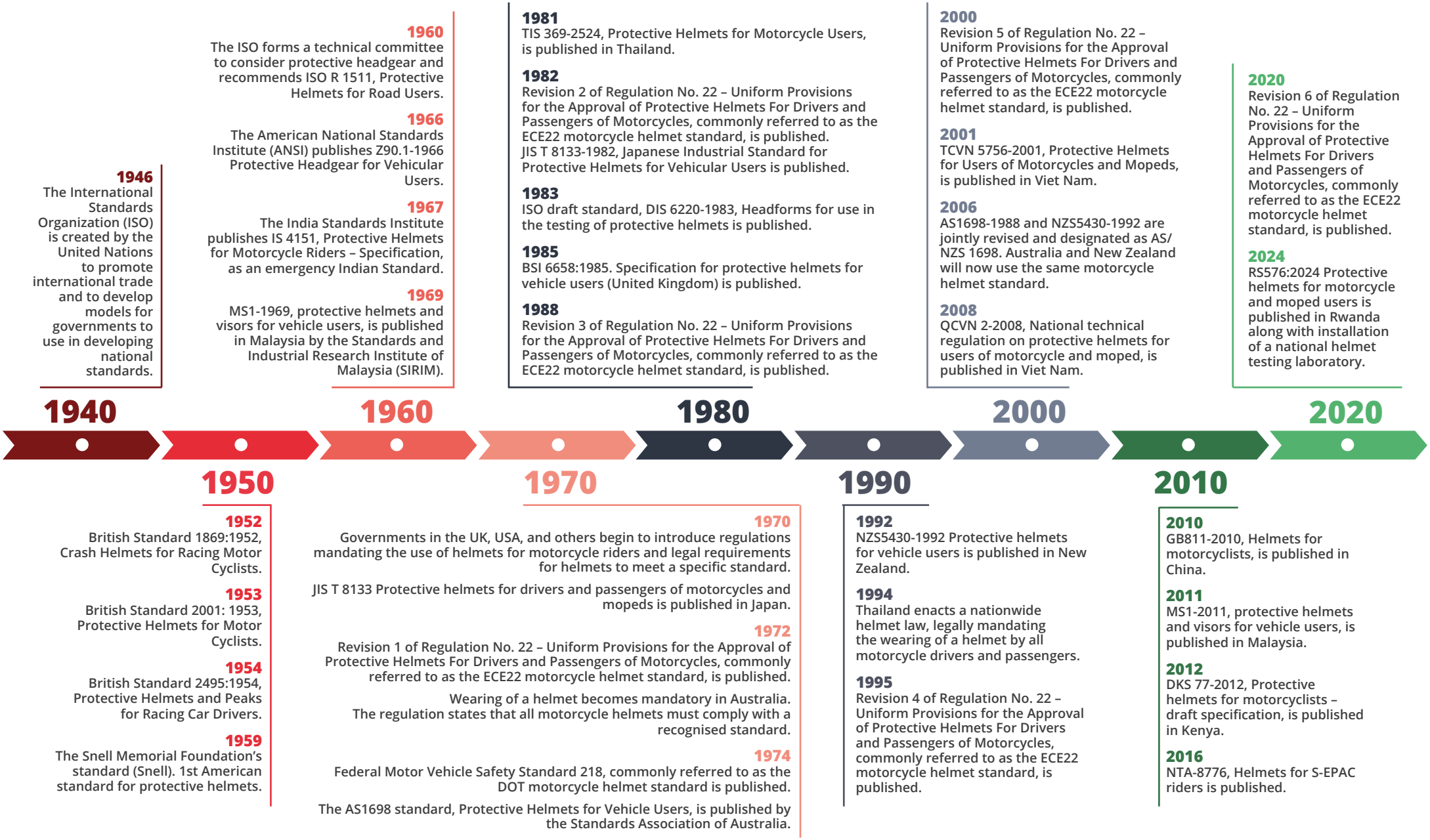


Figure 9.
A timeline of the development of motorcycle helmet standards

AS/NZS 1698 Protective helmets for vehicle users
(Australia and New Zealand)

UN/ECE 22.05 and 22.06 Uniform provisions concerning the approval of protective helmets and their visors for drivers and passengers of motorcycles and mopeds
(Europe)

USA Standard FMVSS No. 218; Motorcycle helmets
(USA)

JIS T 8133 Protective helmets for motor vehicle users
(Japan)

QCVN 2:2021/BKHCN National technical regulation on helmets for motorcyclists and motorcycle riders
(Viet Nam)

BS 6658 British standard specification for protective helmets for vehicle users
(United Kingdom)

GB811 Standard helmets for motorcycle and electric bicycle users
(China)

IS4151 Protective helmet for two wheeler riders - specifications
(India)

Figure 10.

Figure 10. Examples of certification labels for various international helmet standards

A national helmet standard is typically monitored and overseen by a technical committee made up of the standards agency, government officials, helmet manufacturers, product end users and other interested parties. They are responsible for the initial development of the standard as well as the introduction of any changes or revisions to the standard. Helmet standards are typically reviewed every five years and re-approved or re-authorised so they never expire, unless a standard is specifically withdrawn. More importantly, a national standard is generally aligned to other international standards which means that all or several of the tests proposed by the in-country (national) standard are exactly the same as the tests used in other international standards.

Each of the standards mentioned above has a unique set of tests and test requirements; however, many helmet standards use the same or similar testing methods and criteria for evaluating helmets. Numerous tests have been developed by different standards bodies; a summary of some of the tests is shown in Table 1.

Standard test description	Malaysia MS 1	India IS 4151	Thailand TIS 369-2557	Vietnam TCVN 5756	Kenya KS77	Japan JIS T8133	United Kingdom BSI 6658	USA (DOT) FMVSS 218	ECE R22.05	ECE R22.06	Australia AS 1698
Extent of shell/ extent of coverage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shell stiffness test	✗	✓	✓	✗	✓	✗	✗	✗	✓	✓	✗
Internal projections evaluation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
External projections test	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Visor test	✗	✓	✓	✓	✓	✗	✓	✗	✓	✓	✓
Peak deflection test	✗	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
Peripheral vision test	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Retention system effectiveness (rolloff)	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓
Retention system strength	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Retention strap slippage	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Retention strap abrasion	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Retention system release by force	✗	✗	✗	✗	✗	✓	✓	✗	✓	✓	✗
Retention system release by inertia	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Retention system ease of release	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Durability of quick release retention system	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Impact test	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oblique impact test	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Specific rotational test	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✗
Chin guard test	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✗
Penetration test	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓
Sound attenuation test	✗	✓	✗	✗	✓	✗	✗	✗	✗	✗	✗
Flammability test	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	✗
Helmet marking requirements	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Information label requirements	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ specific test included in the standard ✗ no specific test in the standard

Table 1.

Summary of motorcycle helmet standard tests for different international motorcycle helmet standards

While there are many different tests available, all motorcycle helmet standards have several test requirements in common, as follows:

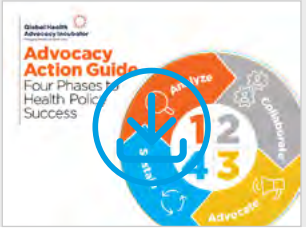
1. **Coverage requirements:** This requirement specifies the area of the head that must be covered by the helmet and the energy absorbing liner. It also may specify the area of the head in which the impact testing may be performed (see Figure B-1 in Appendix B).
2. **Field of vision requirements:** This requirement evaluates how well the helmet provides a wide field of vision for the rider. This maximises the rider's ability to see objects in the roadway and any risks or threats in front of them (see Figure B-2 in Appendix B).
3. **Retention system strength requirements:** This requirement evaluates the ability of the helmet retention system to remain connected and keep the helmet on the wearer's head during a crash. Forces are applied to the helmet to simulate the dynamics that a motorcycle helmet would go through in the event of a crash (see Figure B-3 in Appendix B). The retention system must remain fastened throughout the entire test, and it also may not elongate more than a required amount (typically 25 to 35 mm).
4. **Helmet stability requirements:** This requirement evaluates the ability of the helmet to remain on the wearer's head during a crash. A hook and strap system is used to apply a dynamic force to attempt to pull the helmet off a test headform (see Figure B-4 in Appendix B). The helmet must remain on the headform and, depending upon the standard, it must not be allowed to rotate excessively.
5. **Impact test requirements:** This requirement evaluates how well the helmet will absorb impact energy and distribute the impact forces during a crash. One of three different apparatus are typically used. One system is a twin wire guided fall system where a drop assembly travels along two guide wires and impacts a test anvil at the base of the system. A uniaxial accelerometer measures the headform acceleration during the impact (see Figure B-5 in Appendix B). A similar system is a guided monorail system in which the helmeted headform travels along a linear bearing track and impacts a test anvil at the base of the track (see Figure B-6Figure in Appendix B). A uniaxial accelerometer records the headform acceleration at the time of the impact. The third system is a free motion headform system where a full size helmeted headform is oriented to a specific impact location and raised to the desired drop height and released (see Figure B-7 in Appendix B). A three-dimensional accelerometer records the headform acceleration at the time of impact. In all three systems, helmets may be tested at different impact velocities and against different impact surfaces or test anvils; however, the objective is the same in each instance – to evaluate how well the helmet will protect in a crash as measured by deceleration of the test headform (peak g's).
6. **User information, warning and label requirements:** These requirements provide critical information to the user in terms of how to properly fit and maintain the helmet and when to replace it. Label requirements also provide law enforcement and other agencies with instant confirmation that this helmet model has been certified to the designated helmet standard.

ONLINE RESOURCES

More information on helmet standards can be found in ***"HELMETS: A ROAD SAFETY MANUAL FOR DECISION-MAKERS AND PRACTITIONERS", SECOND EDITION (2023)***.

Freely available from the GRSP Publications website.

The Global Health Advocacy Incubator has published an ***ADVOCACY ACTION GUIDE*** that provides a roadmap for planning an advocacy campaign, with tools, tactics and lessons learned. It can be downloaded, free of charge from the Global Health Advocacy Incubator website.



MODULE 4: How to develop an appropriate motorcycle helmet standard

For maximum effectiveness of a motorcycle helmet standard, appropriate road safety legislation should first be in place. Legislation in this guide is broadly understood as covering any document that is legally binding, for example, Road Safety Acts, Transportation Rules, General Mobility laws enacted by the parliament (or legislative body), or Traffic Regulations enacted by minister(s) or (executive bodies) that applies to all road users.

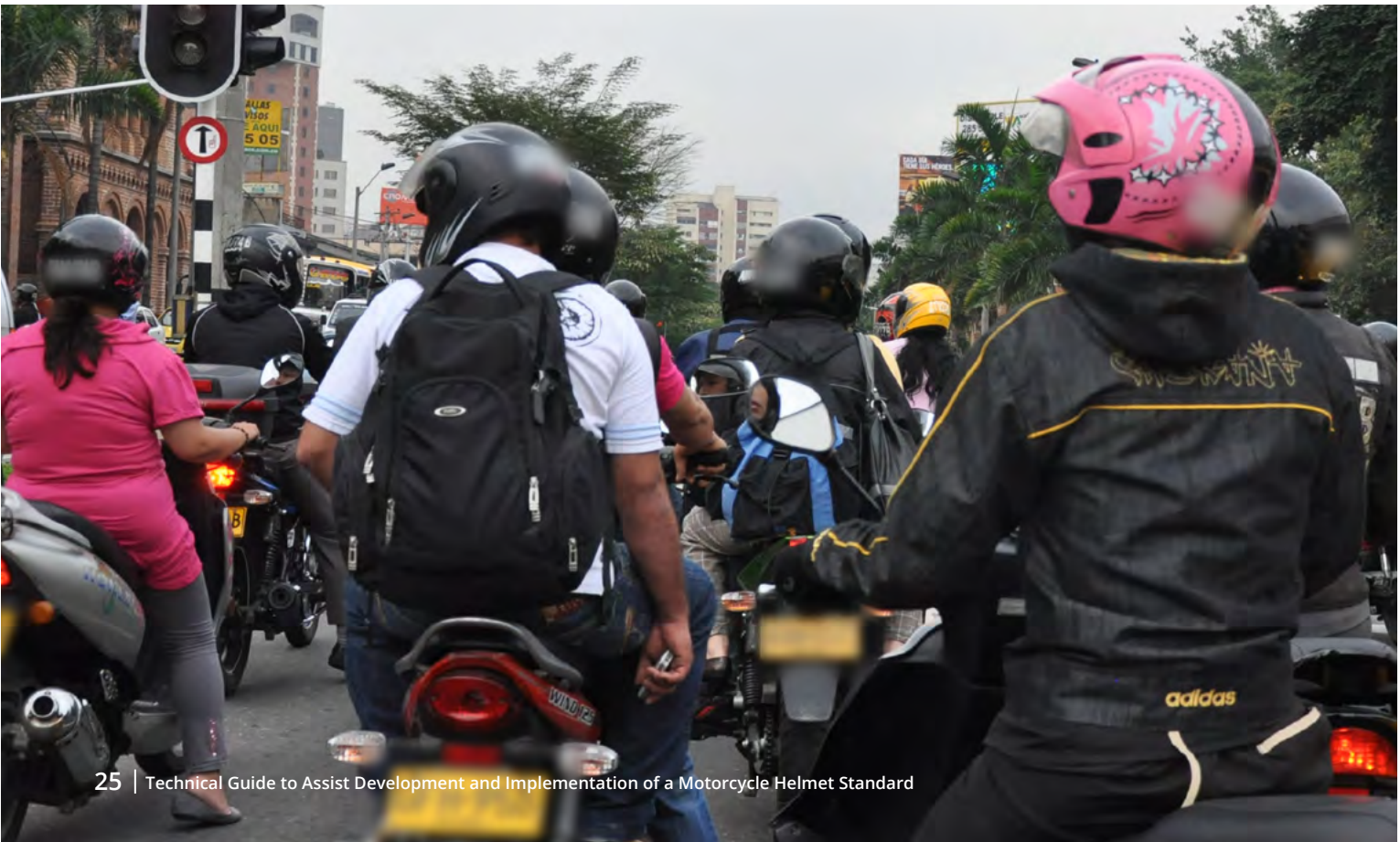
The first step for integrating the helmet standard into road safety legislation is having provisions which includes the following minimum legal requirements:

- **Mandatory helmet use:** Requiring all motorcyclists (both operators and passengers) at all times, on all road types, for all engine types, to wear and fasten a helmet
- **Specifies a prescribed helmet standard, as established by the National Standards Authority.** The law should either specify the standard or require a national responsible body to set the standard within a specified period of time.

In addition to these minimum legislative requirements, it is fundamental to ensure the quality (and protective effect) of helmets, and to **develop the regulatory measures to facilitate the application of legislation** (including guidance on legislative provisions to support effective enforcement). These **issues relating to helmet certification, labelling, and enforcement are generally contained within secondary regulations, such as circulars, decrees, or executive orders, as well as guidelines and protocols** from various public entities/ agencies, each with varying scope and effect. Country specific context (e.g., institutional framework) should be considered in determining appropriate avenue(s) for legislative action. Only when all the regulatory mechanisms linked to a helmet standard are met, it will be possible to reduce, eliminate or mitigate the risks of riding motorcycles.

Integrating a helmet standard into road safety legislation is a multifaceted process that requires careful planning, collaboration, and commitment. By initiating and enacting supportive legislation, rules, decrees, circulars or other secondary instruments and by raising public awareness, and ensuring rigorous enforcement, governments can significantly enhance road safety and reduce the social and financial burden of head injuries and fatalities on their economy.

Developing a motorcycle helmet standard involves a comprehensive process that ensures helmet effectiveness in protecting riders' heads during collisions. It requires collaboration among stakeholders and technical experts, as well as a commitment to improving rider safety from everyone involved in the process. By following a systematic process and engaging all stakeholders, a robust and effective standard can be developed to enhance the quality and level of protection provided by motorcycle helmets in your region. Figure 11 outlines the key steps typically involved in the development of a motorcycle helmet standard.



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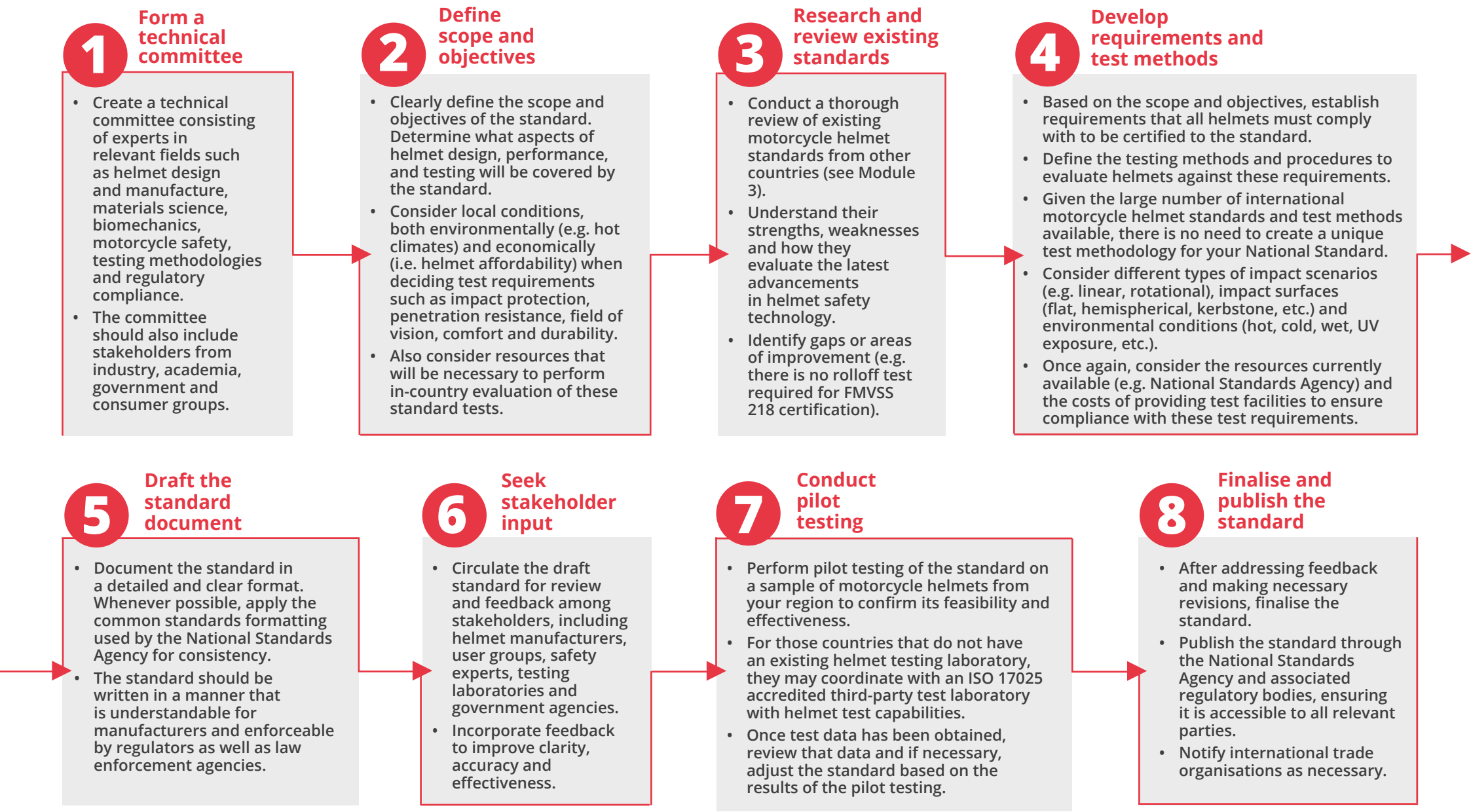

Figure 11.
Key steps involved in developing a motorcycle helmet standard

Once the standard has been published, the next step is to work with the necessary government agencies to make helmet wearing mandatory for all persons on a motorcycle and to make all helmets offered for sale compliant with the new national motorcycle helmet standard. This will require participation and involvement from a large number of stakeholders and supporters who may not be directly involved in road safety matters (see Module 5). Figure 12 contains a summary of the steps described above, including potential stakeholders relevant to each step.

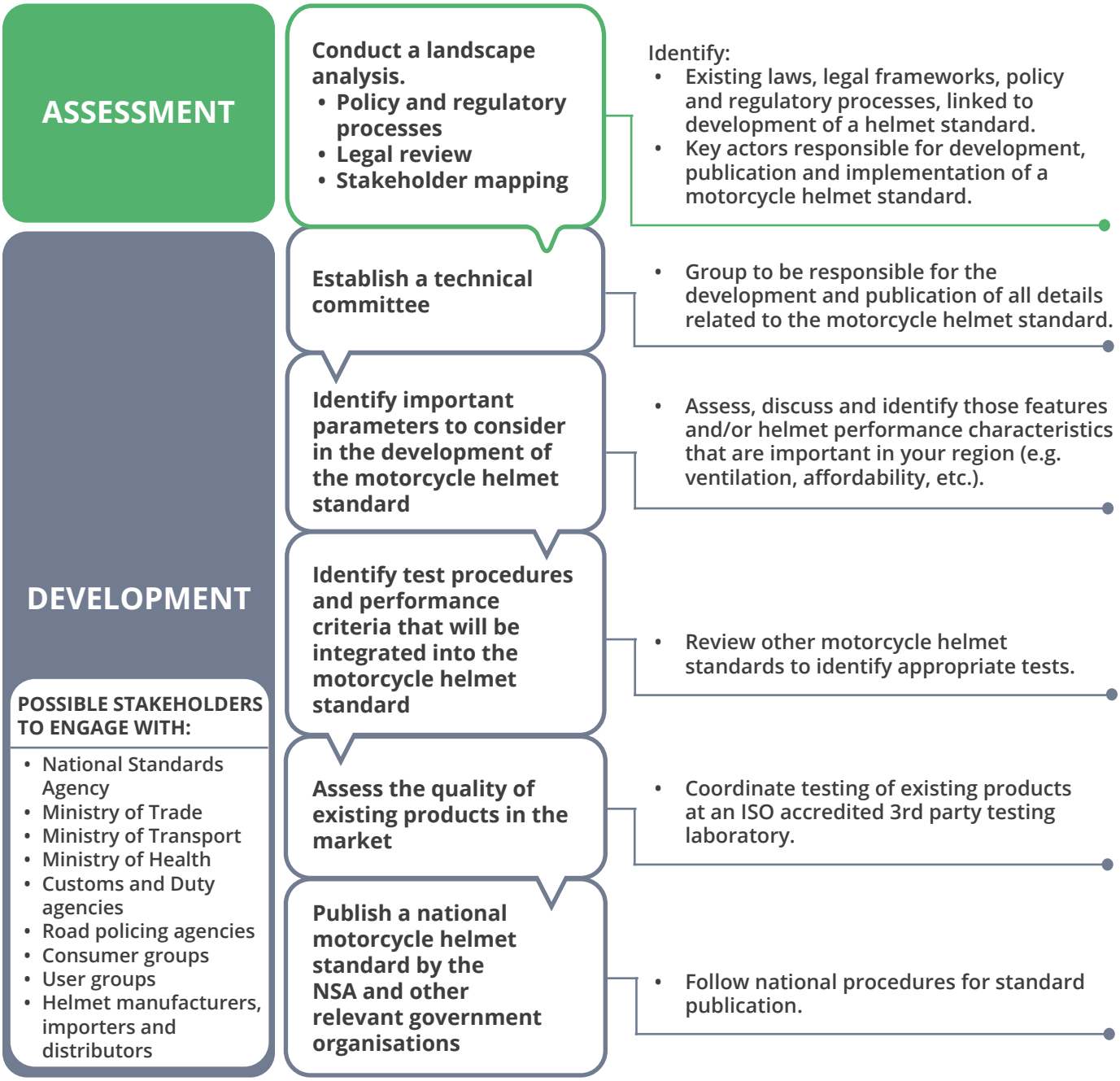

Figure 12.
Assessment and development issues related to publishing a national motorcycle helmet standard

ONLINE RESOURCES

More information on helmet standards can be found in ***"HELMETS: A ROAD SAFETY MANUAL FOR DECISION-MAKERS AND PRACTITIONERS", SECOND EDITION (2023)***.

Freely available from the GRSP Publications website.

The Global Health Advocacy Incubator has published an ***ADVOCACY ACTION GUIDE*** that provides a roadmap for planning an advocacy campaign, with tools, tactics and lessons learned. It can be downloaded, free of charge from the Global Health Advocacy Incubator website.

CASE STUDY

ENSURING HELMET QUALITY IN VIET NAM - VINASTAS

VINASTAS, a not-for-profit and consumer protection organisation in Viet Nam, was instrumental in assuring helmet quality in Viet Nam during 2014 to 2017. By partnering with different government agencies such as the Ministry of Trade, Ministry of Science and Technology (MOST), and the Standard Agency Directorate for Standards, Meteorology and Quality of Viet Nam (STAMEQ); VINASTAS was successful in assisting with the development of several regulatory documents related to helmet quality in Viet Nam:

(a) "The National Technical Regulations on Helmets": *QCVN2:2008/BKHCN*

(b) "Draft proposal of Decision on Guideline for Helmet Certification": *Decision No 1024/QD-TDC*

(c) "Government Decree on conditions of helmet trade for MOPED Riders and Motorcycles".

VINASTAS key achievements and notable successes included:

- The establishment and coordination of the expert groups in charge of formulating recommendations for revising the key regulatory documents on helmet quality management.
- Expert consultation for improving the feasibility of the TCVN and QCVN helmet standard revision process.

Their activities included:

- Purchased and tested 120 helmets (40 types from 15 helmets producers) which were taken from markets for checking feasibility of the drafted Guidelines for Helmet Certification.
- Worked with helmets producers (Club of Helmets producers Ho Chi Minh City) and Viet Nam Standards & Quality Institute (VSQI) on the test results, and proposed *administrative* violations in the production, import and distribution of helmets
- Proposed an alignment of certification mode for importing helmets with regulatory document on clearance of importing goods at the borders and revising ***QCVN2:2008***, not to duplicate the control action for the same goods.
- Proposed specific labels and mark of conformity, to assist consumers in identification of certified helmets

- Developing a technical capacity plan on how to improve helmet quality management requirements, particularly the responsibilities related to helmet certification and standard conformity activities.
- Planned and implemented the "Helmet Quality Media Program" in cooperation with national television agencies (e.g. VTV, HTV), newspapers, magazines and websites. The programme covered different aspects of improving consumer awareness as related to helmet quality in Viet Nam.

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CASE STUDY

THE JAMAICAN MOTORCYCLE HELMET WEARING COALITION

Jamaican road safety experts identified the lack of helmet wearing as a significant contributing factor in the number of motorcycle-related road fatalities in Jamaica. To address this problem, they established the Jamaican Motorcycle Helmet Wearing Coalition (NHWC) as a public-private partnership with the aim of increasing awareness about the importance of wearing a certified motorcycle helmet every time you ride. The coalition is convened by the Jamaican Road Safety Council (NRSC) and the JN Foundation which is supported by the FIA Foundation.

The coalition seeks to better understand the unsafe practices and attitudes of motorcycle riders in Jamaica and develop appropriate countermeasures.

For more information:

- FIA Foundation
- JN Foundation

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MODULE 5: Implementing the motorcycle helmet standard

Developing a plan or strategy to implement the motorcycle helmet standard is essential for ensuring the continued and ongoing success of any helmet safety programme. This effort largely relates to developing a plan to confirm product certification and to ensure that motorcycle helmets are appropriately labeled to indicate compliance with the national standard. This will include product testing by the National Standards Agency or another ISO-accredited helmet test facility.

Implementing a helmet standard may also require contributions from different stakeholders, some of which may not be directly involved in road safety issues (see Figure 13). The key to success is to work together harmoniously, enhancing efficiency, reliability and scalability. Each country will likely have a unique process based on its own resources. It requires meticulous planning and coordination, stakeholder engagement, and a full understanding of the existing organisations, their responsibilities and capabilities, and future requirements.

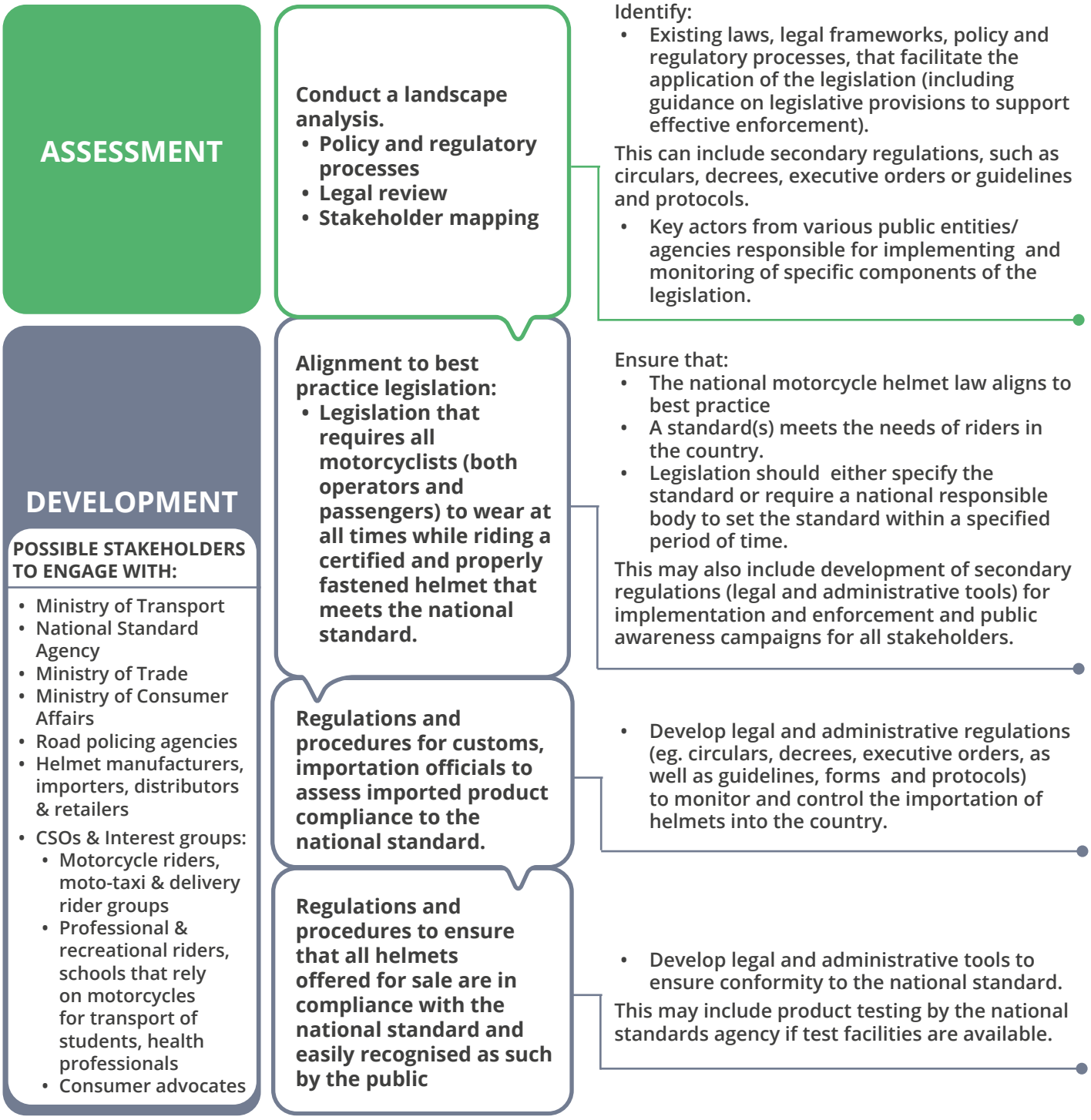

Figure 13.
Assessment and development issues related to implementation of a motorcycle helmet standard

ONLINE RESOURCES

More information on advocacy campaigns, media advocacy and policy implementation can be found in the ***GRSP ADVOCACY CAMPAIGN TOOLKIT*** which is a multi-part comprehensive guide detailing all aspects of constructing a successful advocacy campaign, freely available from the GRSP Publications website.

More information on development of an effective enforcement campaign and maximising the impact of road policing can be found in the ***GRSP ROAD POLICING NETWORK (GRPN).***

Establish a helmet test laboratory

Ensuring the quality and safety of the motorcycle helmets sold in-country requires rigorous testing to meet the established national standard. By ensuring that helmets on the market comply with the published safety standard, a test facility will help prevent the sale of substandard products and will ensure that manufacturers adhere to the national standard. The ability to test products sold in-country will also enhance public safety and public confidence in the helmets they wear. Developing a dedicated motorcycle helmet test facility is a complex but crucial component of the overall implementation that involves careful planning, adherence to technical standards, and collaboration with various stakeholders.

Selecting an appropriate location for the helmet test facility is the first step. This often includes a decision regarding which government agency will be responsible for support, management and implementation of the helmet testing laboratory. This is most often, but not exclusively so, the national standards body. Key considerations involved with planning and designing the helmet test facility include:

- **Accessibility:** The facility should be easily accessible to manufacturers, regulatory bodies, and other stakeholders.
- **Space Requirements:** Adequate space is needed for the test equipment, administrative offices, and storage areas for helmets and miscellaneous test equipment.
- **Utilities:** Reliable access to utilities such as electricity, water, and internet is essential for smooth operations.
- **Staffing:** A well-functioning helmet test facility will require a laboratory manager, test engineers, technicians as well as administrative staff to handle documentation, client interactions and logistical support.

In order to have the capability of performing all test procedures documented in the helmet test standard, custom test equipment must be purchased or fabricated. Depending upon the tests specified in the helmet standard and the resources of the helmet test facility, some or all of the following test equipment will be required:

- Field of vision and helmet coverage equipment
- Test headforms
- Retention system strength test equipment
- Helmet stability (roll-off) test equipment
- Impact test equipment
- Impact test anvils
- High speed camera and lighting systems.

For the test results from the laboratory to be recognised by other independent international test laboratories, it is common practice for the helmet test laboratory to obtain ISO/IEC 17025 accreditation. This is an accreditation that is given to test laboratories by a Recognised Accreditation Body that is a member of the International Laboratory Accreditation Cooperation (ILAC). The accreditation body will perform an audit of the testing laboratory that will include a review of all testing laboratory quality management documentation as well as an on-site assessment to witness helmet testing proficiency. This audit will ensure that the laboratory maintains appropriate training programmes, test equipment, test procedures, test records and has a quality management system in accordance with the ISO 17025 standard.

Developing a motorcycle helmet test facility is a multi-faceted endeavor that requires meticulous planning, significant investment, and adherence to stringent standards (see Figure 14). By establishing a well-designed facility equipped with state-of-the-art technology and staffed by skilled professionals, it is possible to ensure that all helmets offered for sale in-country will meet the highest safety standards, thereby enhancing rider safety and supporting the regulatory effort. The journey involves overcoming technical, regulatory, and financial challenges, but the benefits—improved public safety, market integrity, and support for regulatory compliance—are substantial and necessary to the success of any helmet road safety programme.

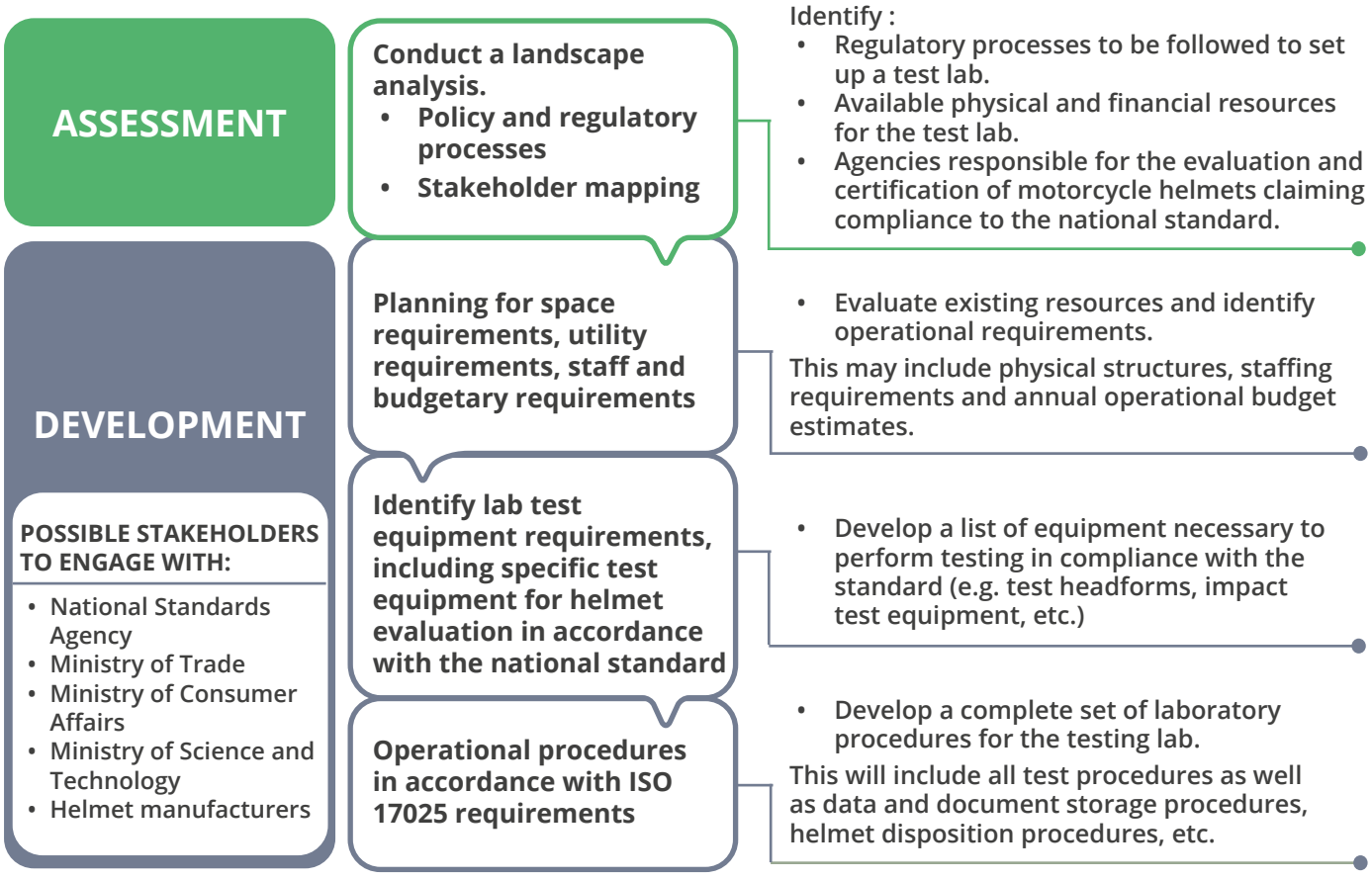

Figure 14.
Assessment and development issues related to establishing a helmet test laboratory

CASE STUDY

ESTABLISHING A HELMET TESTING LABORATORY IN RWANDA

In early 2024, Healthy People Rwanda (HPR), a local NGO, participated in the development of Rwanda's first national standard for motorcycle head protection (RSB 576:2024). Concurrent with this effort and with funding support from the FIA Foundation, Healthy People Rwanda coordinated the sourcing and purchasing of the test equipment necessary to allow the Rwanda Standards Board (RSB) to assess helmet compliance to the new standard. HPR also worked hard to prepare the documentation necessary to secure a tax exemption for all the test equipment, resulting in a significant cost savings to the overall project. The testing laboratory was installed in the RSB facilities in Kigali and officially opened in December 2024, representing the first helmet testing laboratory in the East Africa region.

Along with providing assistance with staff training on how to use the test equipment, HPR has also implemented several helmet awareness campaigns to promote and increase awareness of the new motorcycle helmet standard and the importance of wearing a certified motorcycle helmet.

Monitoring and controlling importation of motorcycle helmets

The effectiveness of a motorcycle helmet depends largely on its adherence to safety standards. High-quality helmets that meet established safety standards are crucial for protecting riders. Helmets that fail to meet these standards do not provide adequate protection, leading to severe injuries or fatalities in crashes. Allowing substandard or unqualified helmets into the market undermines consumer confidence and disadvantages those manufacturers who have spent the time, money and effort to adhere to the national motorcycle helmet standard. Development of effective monitoring and control mechanisms ensure a level playing field for all certified helmet manufacturers and retailers. The importation regulations and procedures should include the following components:

- **Compliance documentation procedures:** Importers must provide detailed documentation to the designated government agency proving that the helmets meet the requirements of the national motorcycle helmet standard.
- **Plans for monitoring:** The agency responsible for importation must have a procedure to monitor ongoing importation to continue to assure the public regarding the quality of the motorcycle helmets they are buying. This may include random sample testing of imported products.
- **Penalties for non-compliance:** Establishing significant penalties for the importation and sale of non-compliant helmets to deter violations.

In addition to monitoring helmets entering the country, the designated agencies must also continuously monitor the products being offered for sale in-country to ensure that helmets continue to meet the national standard. These agencies must also have enforcement mechanisms in place to properly apply penalties and legal action.

Monitoring and controlling the importation of motorcycle helmets is a complex but essential task for maintaining market integrity and ensuring rider safety as well as the success of a helmet programme. Figure 15 describes some of the issues related to monitoring and controlling importation of motorcycle helmet. By planning and implementing robust monitoring mechanisms, and enforcing compliance through significant penalties and legal actions, governments can protect consumers from the dangers of substandard helmets. Collaboration among stakeholders and continuous improvement of strategies are key to addressing the challenges and achieving effective control over helmet importation.

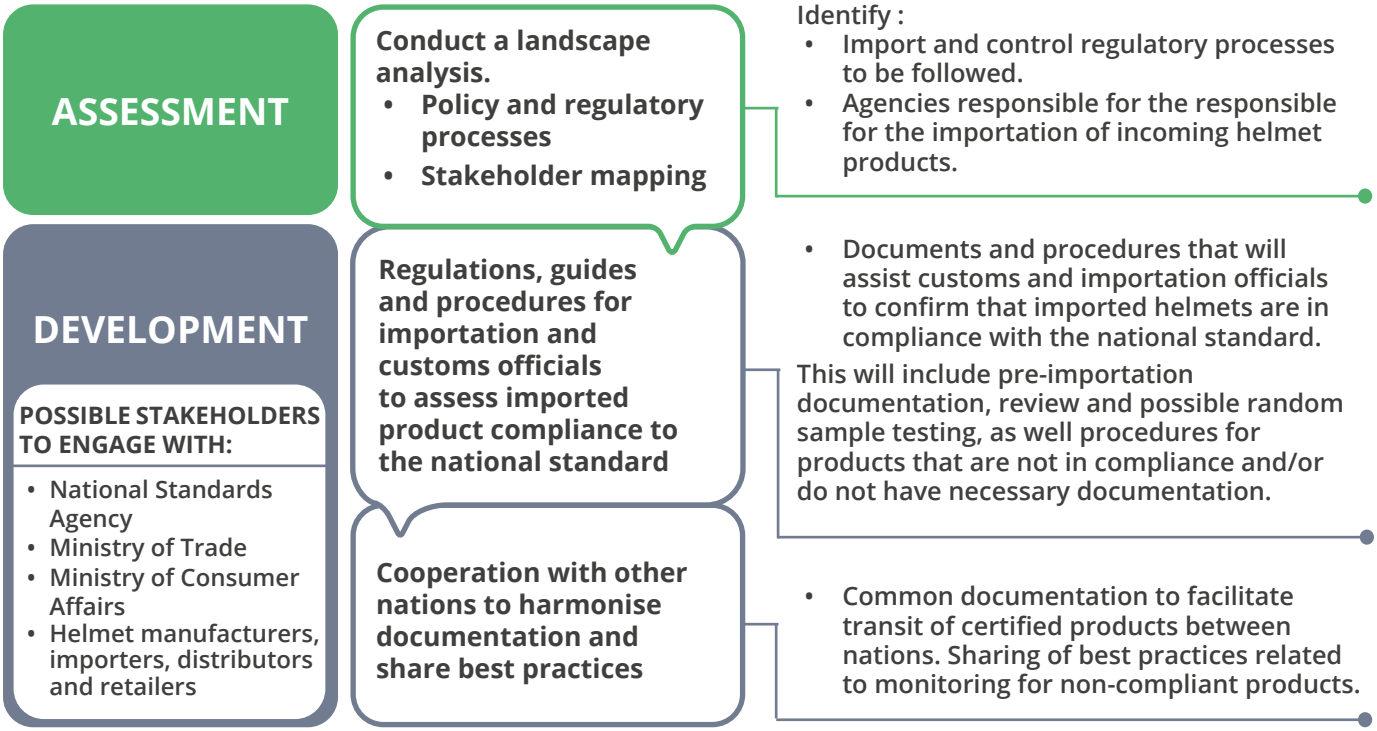

Figure 15.
Assessment and development issues related to monitoring and controlling helmet importation

CASE STUDY

HOCKEY HELMETS AND THE CANADA CONSUMER PRODUCT SAFETY ACT (CCPSA)

First enacted in 1985, the Canadian Government's Hazardous Products Act was intended to protect Canadians against consumer products that pose, or are likely to pose, a danger to human health and safety. The Act prohibited the advertising, sale and importation of hazardous products. Since hockey is the Canadian national pastime, the government at the time decided that hockey helmets needed to be included in the Act. Consequently, as part of the Act, any hockey helmet that did not meet the Canadian Standards Association (CSA) Standard for Ice Hockey Helmets (CSA Z262.1), was prohibited from being imported, advertised or sold within Canada. Any company or entity that attempted to import or sell such a product was subject to significant fines and punishment. As a result of effective monitoring and control of product imports as well as products manufactured within Canada, it is virtually impossible to locate and purchase a hockey helmet in Canada that is not in compliance with the National Standard published by CSA.

In 2011, the Canadian government updated this act and renamed it the Canada Consumer Product Safety Act (CCPSA). Hockey helmets continue to be included with the CCPSA.

For more information:

► Consumer Product Safety Legislation

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ONLINE RESOURCES

The European Commission has recommended a ***SERIES OF ACTIONS TO COMBAT COUNTERFEITING AND TO BETTER PROTECT INTELLECTUAL RIGHTS***; more information can be found on this website.

The European Commission has also created a ***TOOLBOX AGAINST COUNTERFEITING***, which may be downloaded free of charge from this website.

Enforcement of helmet law

Despite the proven benefits of wearing a certified motorcycle helmet, compliance with helmet-wearing laws can be inconsistent. Policing plays a pivotal role in ensuring that all riders and passengers adhere to these laws and wear certified helmets that meet the national safety standard. Enforcing a helmet law and ensuring that all riders and passengers wear certified helmets can save lives, reduce injury severity and reduce the burden on healthcare systems. An effective plan for enforcing helmet wearing must include strategic planning, stakeholder engagement, resource allocation, enforcement strategies, public awareness campaigns, monitoring and evaluation, and developing methods to address challenges. Figure 16 contains a summary of the stages and tasks involved in ensuring effective enforcement of a helmet law.

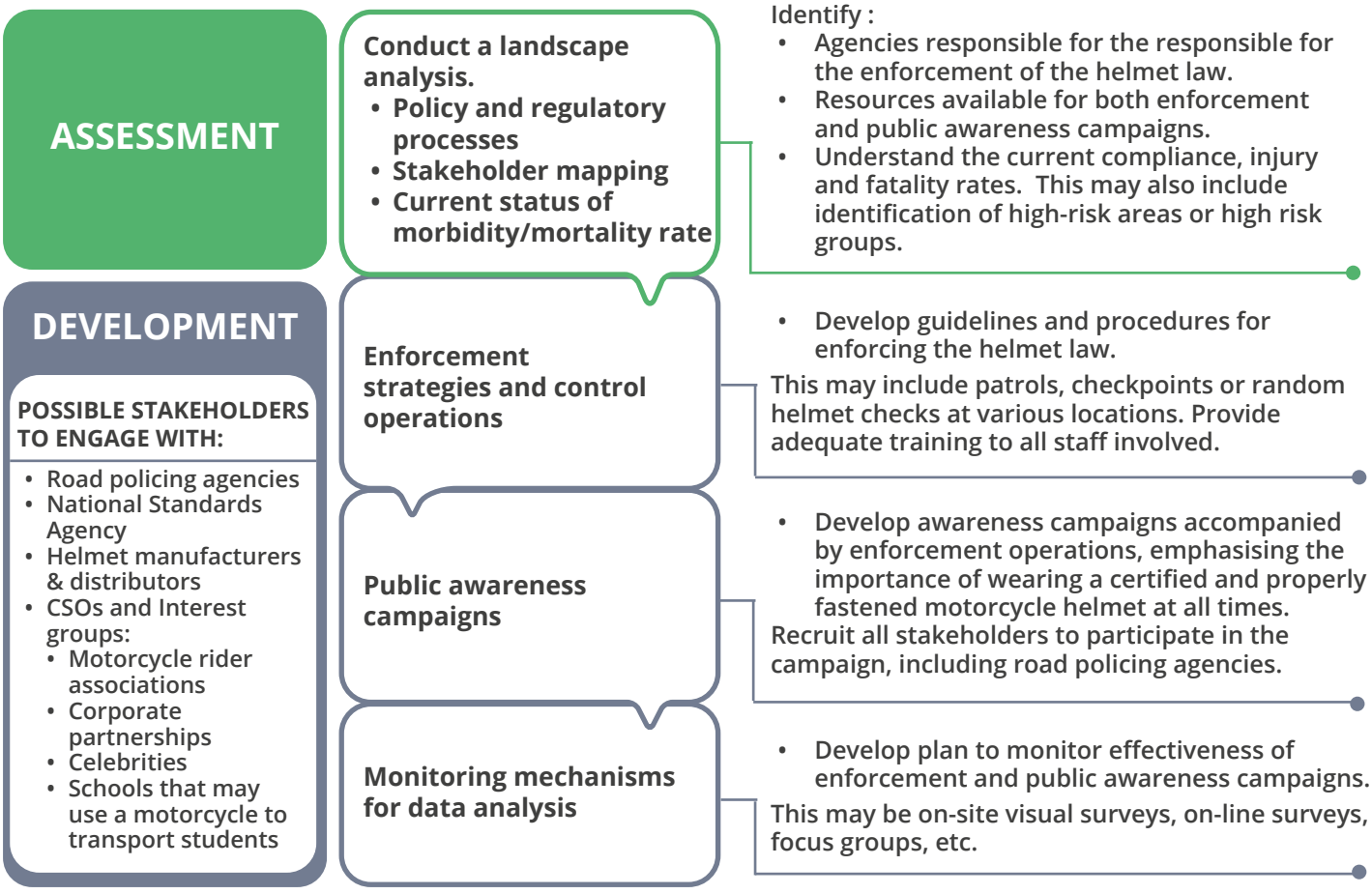

Figure 16.
Assessment and development issues related to helmet law enforcement

ONLINE RESOURCES

More information on the development of an effective enforcement campaign and on maximising the impact of road policing can be found in the GRSP document ***ROAD POLICING IN ASIA: CONSIDERATIONS FOR STRENGTHENING POLICY AND PRACTICE TO IMPROVE ROAD SAFETY (2019)***, freely available from the GRSP Publications library.

More information on developing effective enforcement campaigns and maximising the impact of road policing can be found in GRSP's ***GLOBAL ROAD POLICING NETWORK (GRPN)***.

Standards harmonisation

The goal of harmonisation is to have every country in a region use the same standard, or at least agree that their individual standards are equivalent. Standards for motorcycle helmets can vary significantly across different countries and regions. This variation between national motorcycle helmet standards poses challenges for helmet manufacturers, helmet importers and distributors, regulators, and riders. In addition, different motorcycle helmet standards may present a barrier to international trade, inconsistent safety levels, and difficulties in overall enforcement.

Harmonising motorcycle helmet standards is essential to:

- ensure a consistent level of safety,
- facilitate global trade, and
- simplify regulatory compliance.

Harmonised standards also help to eliminate substandard and unqualified helmets from the market, thereby reducing the risk of head injuries and fatalities. Having harmonised standards also simplifies the certification process for manufacturers, allowing them to produce helmets that meet global requirements. This reduces helmet cost, promotes innovation, and enables easier market access, benefiting both manufacturers and consumers.

Conducting comprehensive research and analysis is the first step in the harmonisation process. This involves:

- **Comparative Analysis:** Comparing existing national and regional helmet standards to identify similarities, differences, and best practices.
- **Impact Assessment:** Assessing the potential impact of harmonisation on safety, trade, and regulatory compliance.
- **Stakeholder Consultation:** Engaging with key stakeholders to gather input, understand concerns, and build consensus.

Harmonising motorcycle helmet standards is a complex but essential endeavor to enhance rider safety, facilitate international trade, and simplify regulatory compliance. Developing a comprehensive plan for harmonisation involves conducting preliminary research (outlined above), establishing a dedicated task force, developing consensus regarding equivalency, integrating necessary regulations into the national regulations, and addressing potential challenges. Effective implementation requires building consensus, communication and outreach, capacity building, and monitoring and evaluation. A dedicated task force should be established to oversee the harmonisation process. This task force should include representatives from international standards organisations, national standards bodies, helmet manufacturers, regulatory agencies, and consumer safety organisations (see Figure 17). Harmonised standards protect lives and promote a safer, more efficient, and globally connected motorcycle industry.

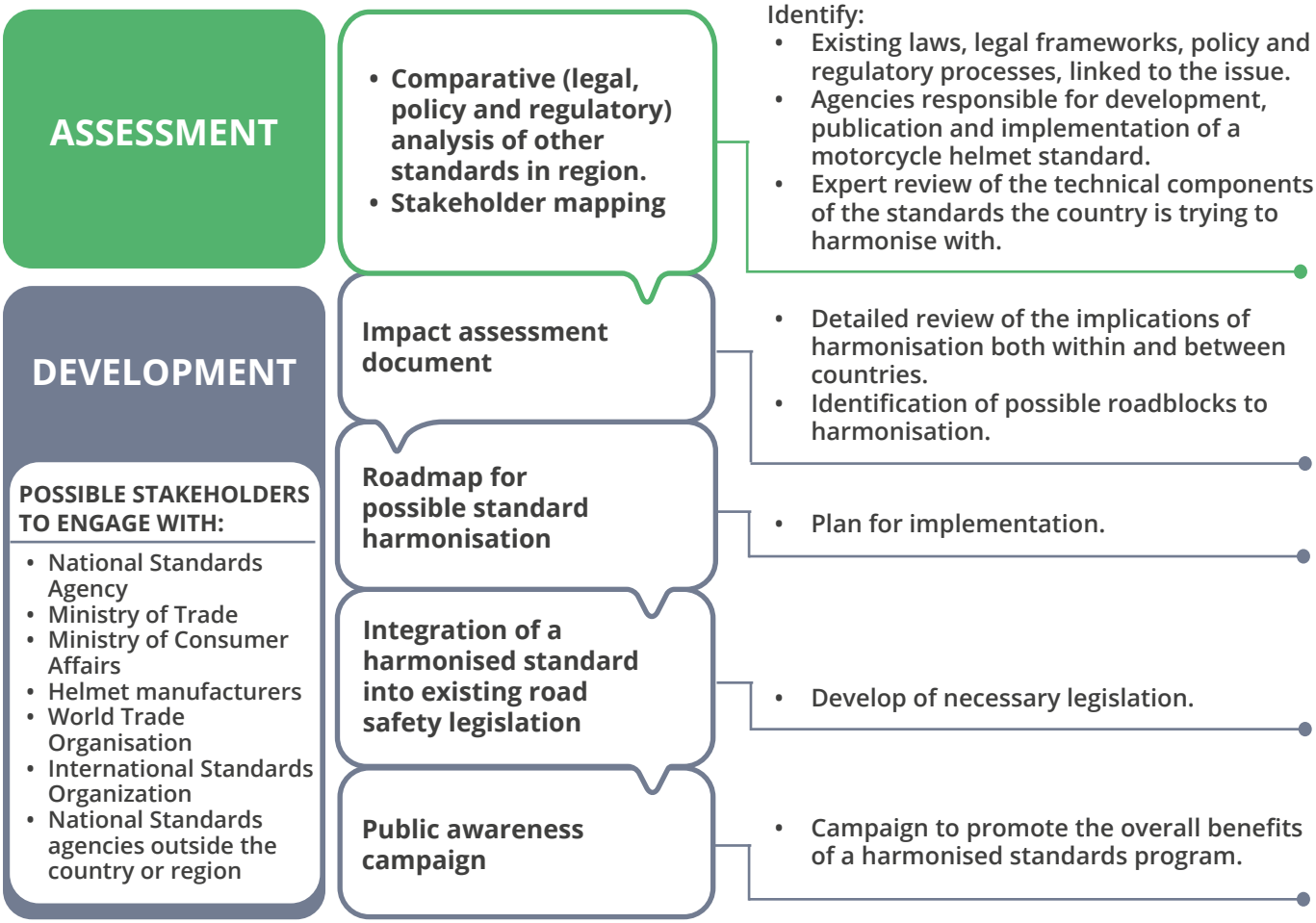

Figure 17.
Assessment and development issues related to helmet standard harmonisation

CASE STUDY

WORLD FORUM FOR HARMONISATION OF VEHICLE REGULATIONS

The World Forum for the Harmonisation of Vehicle Regulations is a working party of the Inland Transport Committee (ITC) of the United Nations Economic Commission for Europe (UNECE). It is responsible for the management of international multilateral agreements that were signed in 1958, 1997 and 1998 regarding the technical requirements or vehicle regulations related to the approval of wheeled vehicles sold globally. As of 2022, there were 68 countries that had signed the 1958 agreement, each allowing the importation, sale and use of UN type approved vehicles and products in their country.

Since 1952 this group has been working towards developing specific harmonised UN regulations and to date, 135 vehicle regulations have been published, each relating to a different vehicle component or technology (e.g. mirrors, headlamps, braking systems, etc.). Regulation No. 22 (Protective helmets) is also part of this list of harmonised vehicle regulations.

The 1998 agreement was established to address differences in type approval or self-certification of these UN regulations as well as to create UN global technical regulations (GTR) that include globally harmonised performance requirements and test procedures that may be integrated into national standards, regulations and laws. At present there are 24 UN GTRs and 33 contracting parties that agree to these GTRs.

For more information:

- WP.29-How it Works, How to join It
- Global Technical Regulations (GTRs)

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CASE STUDY

THE AFRICAN CONTINENTAL FREE TRADE AREA (AFCFTA)

Initiated in 2012, the AfCFTA was ratified in 2019 by 24 African member states. Shortly thereafter, additional member states joined to create what has become the largest free trade area in the world, bringing together 55 countries in the African Union and eight Regional Economic Communities (RECs). The objective of AfCFTA is to eliminate trade barriers and boost intra-Africa trade across all sectors of the African Economy. As part of the agreement, this means that helmets that are manufactured in one nation to a qualified national helmet standard may be sold in another region without duty or tariff.

For more information:

- AFCFTA website

MODULE 6: Communication planning

Developing a communication plan for promoting the implementation of a motorcycle helmet standard is crucial to ensure the successful adoption and enforcement of the standard. A well-crafted communication plan helps disseminate critical information about the helmet standard to all relevant stakeholders, including manufacturers, retailers, road policing agencies, and riders (see Figure 18). It ensures that the objectives, benefits, and requirements of the helmet standard are clearly understood, fostering compliance and enhancing public safety. Effective communication strategies build awareness, address misconceptions, and encourage widespread acceptance, ultimately leading to improved safety outcomes and reduced head injuries among motorcyclists. By prioritising a comprehensive communication plan, stakeholders can collaboratively promote the importance of wearing helmets certified to the national standard and ensure its effective implementation.

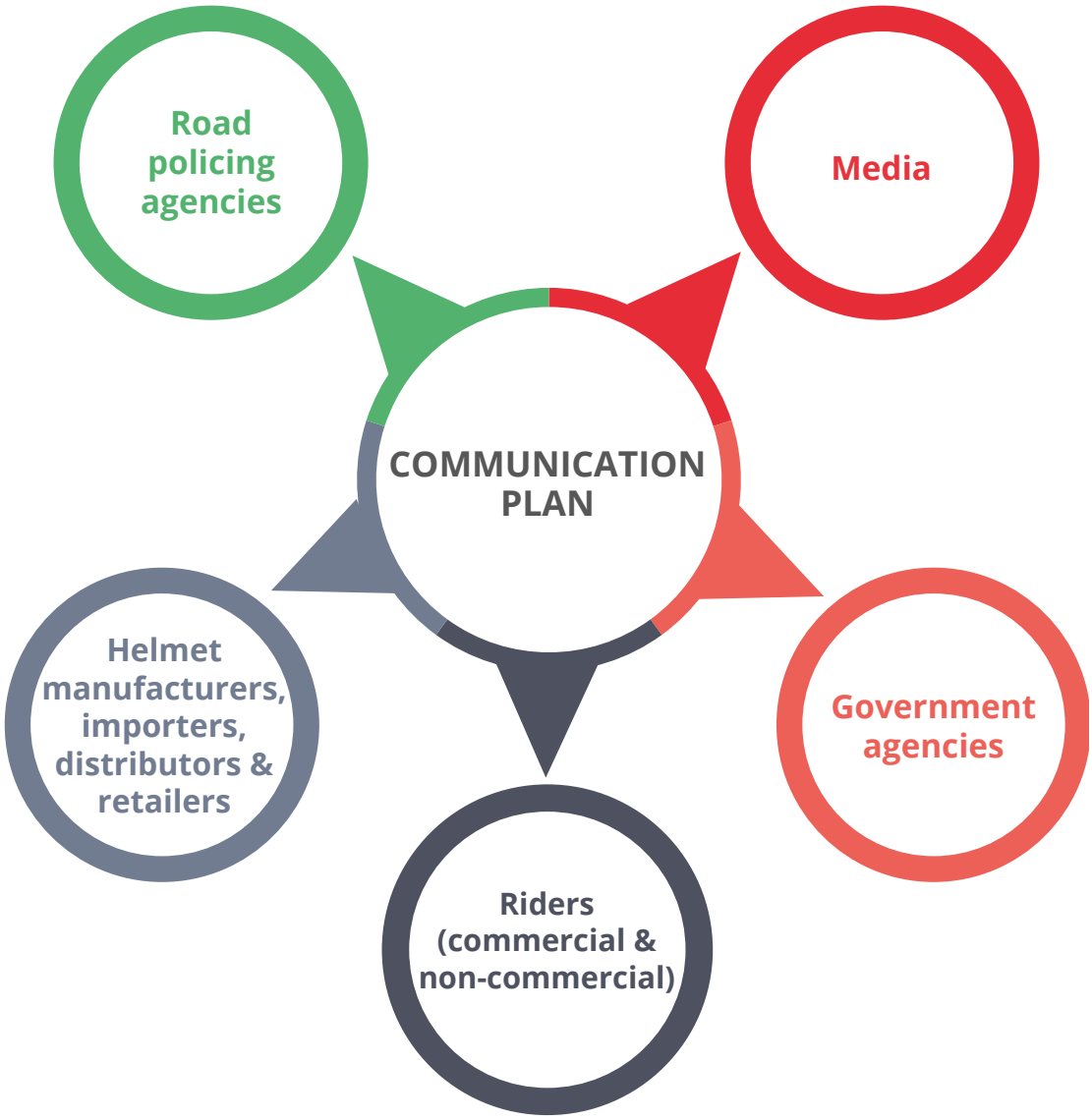

Figure 18.
Target groups for the communication plan

Communication - Media

The success of a helmet standard and a helmet wearing law largely depends on effective communication to ensure awareness, understanding, and compliance. Media plays a pivotal role in this communication process, serving as a bridge between policymakers, manufacturers, law enforcement agencies, rider groups and the general public. Positive and informative media coverage can help build public support for the motorcycle helmet standard, while addressing any misconceptions or resistance. A well-structured media communication plan ensures that everyone is informed and understands the importance of wearing a certified helmet as well as the importance of compliance with the new regulation.

Communication - Riders

The effectiveness of how well a new motorcycle helmet standard and helmet wearing law is received largely depends on how well it is communicated to the primary stakeholders—in this case, motorcycle riders and passengers. This group includes regular motorcycle riders, recreational riders, motorcycle clubs and associations, as well as new riders. This group also includes adolescents and children, who are often passengers on a motorcycle.

Awareness campaigns that highlight the dangers of unqualified or uncertified helmet use and the advantages of helmets certified to the new standard can drive compliance and improve overall safety. Clear communication of the legal requirements and the consequence of non-compliance is essential. Riders need to understand the specific requirements of the standard and/or legislation and how to identify and purchase certified motorcycle helmets in order to avoid penalties.

Motorcycle riders may consider themselves a unique group of road users and transparent communication can help build trust among riders. Explaining the process behind developing the standard, including the involvement of experts and consideration of rider feedback, can foster support and willingness to comply. A well-executed communication plan can facilitate the smooth implementation of the helmet standard by preemptively addressing concerns, providing necessary information, and guiding riders through the transition process.

Commercial motorcycle riders are a unique sub-group of the motorcycle rider population, and ensuring that commercial riders are aware of and comply with the new helmet standard is crucial for legal adherence. Commercial motorcycle riders, including delivery drivers, courier services, and ride-share operators, are frequently on the road and thus face a higher crash risk due to their increased exposure. Commercial motorcycle riders are often under time pressure and ride extensively in varying conditions, making safety paramount. Effective communication about the benefit of wearing a certified helmet that complies with the new helmet standard can significantly reduce the risk of head injuries and fatalities. Adherence to the helmet law demonstrates the employer's commitment to safety and responsibility, which can positively influence public perception and customer trust. Non-compliance endangers lives and exposes riders and their employers to legal consequences. Adherence to the new helmet standard can enhance the professional image of commercial riders and their employers.

Head injuries due to wearing an unqualified motorcycle helmet can also result in significant medical costs and lost productivity. By promoting the use of certified helmets, commercial motorcycle riders can remain productive, and companies can reduce lost time and improve overall operational efficiency.

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Communication – Helmet industry

The helmet industry plays a critical role in this process of helmet standard implementation, as their compliance and adherence to the new standard is essential for success. In addition to the helmet manufacturer, component suppliers, helmet importers and distributors, industry associations and possibly other testing and certification bodies may be included in the communication plan.

Developing a comprehensive communication plan specifically tailored for the helmet industry is crucial to ensure they are informed, prepared, and aligned with the new regulations. Helmet manufacturers must understand the new standard in order to produce helmets that will comply with the performance specifications. Effective communication ensures manufacturers are aware of the specifications, testing procedures, and certification processes required along with the importation requirements, if applicable.

By ensuring manufacturers adhere to the standard, the production of higher-quality helmets that provide better head protection is facilitated. Manufacturers need to know that non-compliance with the helmet standard can result in legal penalties and loss of market access. Manufacturers, importers, distributors and retailers also need to be aware of the legal requirements and market implications to avoid penalties and maintain their market position. Transparent communication about the standard and its overall benefit in terms of rider safety can build trust and credibility within the industry. Compliance on the part of the helmet manufacturer demonstrates a commitment to safety and quality, which can enhance the reputation of the manufacturer.

Communication – Road policing agencies

Road policing agencies are not often considered in communication planning; however, they play a pivotal role in ensuring that all riders and passengers adhere to the new motorcycle helmet standard. This group includes patrol officers, traffic enforcement units, law enforcement leadership personnel, training departments and community liaison officers. Developing an effective communication plan, tailored specifically to all members of the road policing community is essential to facilitate the successful implementation and enforcement of the helmet standard and the helmet wearing law. Effective communication with road policing agencies ensures that police are well-informed and equipped to promote and enforce the helmet law.

Clear communication helps preventing misunderstandings and ensures that enforcement actions are legally sound. Transparent and consistent enforcement of the motorcycle helmet wearing law can build and reinforce public trust in police. When officers are well-informed and fair in their enforcement, it enhances their credibility and the public's perception of their role in promoting safety. A well-structured communication plan can streamline the dissemination of information, reducing the administrative burden on road policing agencies. It also ensures that all officers receive the same information and understand their responsibilities regarding helmet wearing enforcement.

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Summary

Developing a comprehensive communication plan for the implementation of new motorcycle helmet standard is essential to ensure awareness, understanding, and compliance among all stakeholders. By leveraging the power of media and strategic partnerships, stakeholders can effectively disseminate critical information, address concerns, and promote adoption of the new helmet standard. Figure 19 contains a summary of the relevant information.

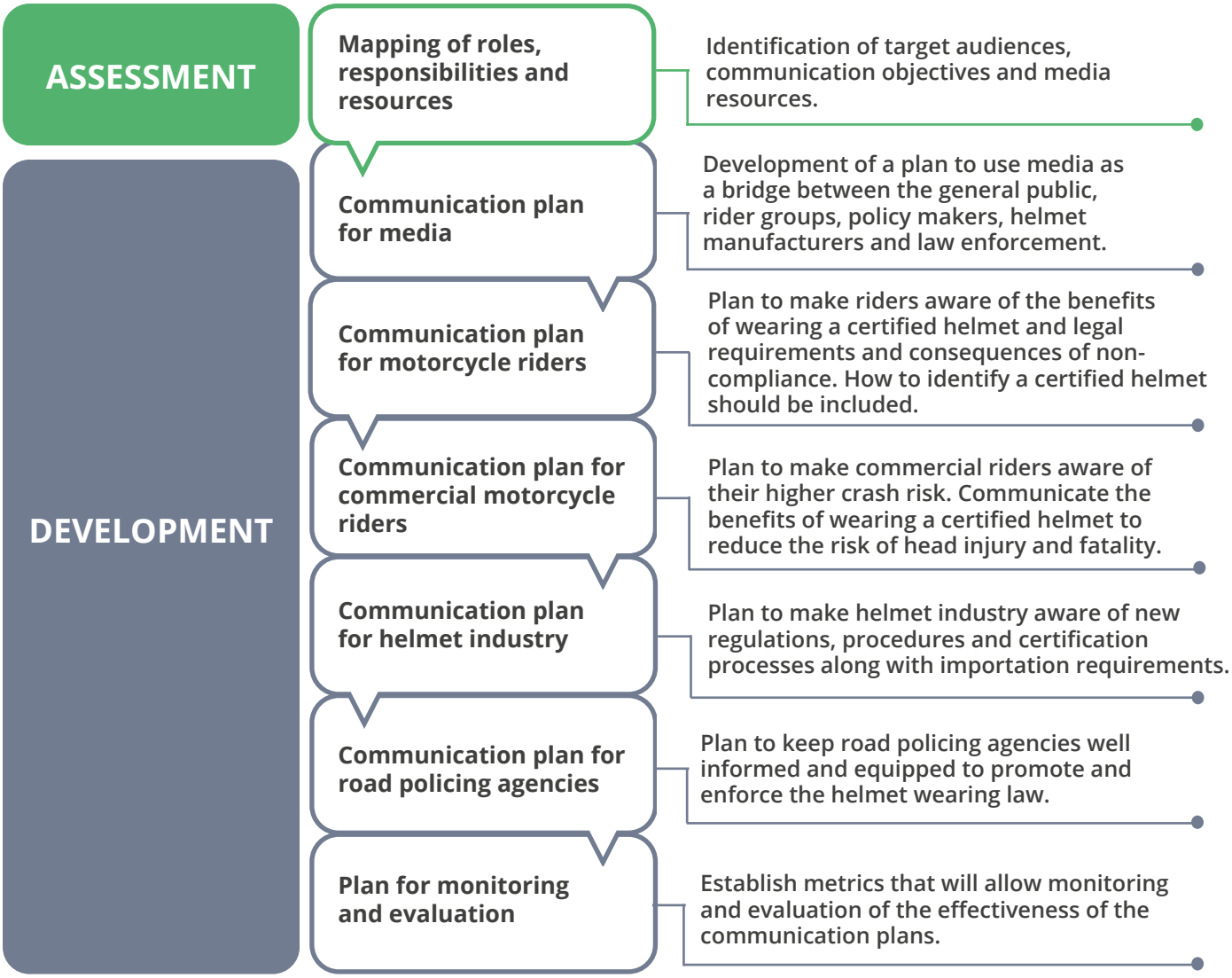

Figure 19.
Assessment and development issues related to the communication plan

ONLINE RESOURCES

More information on media advocacy can be found in the ***GRSP ADVOCACY CAMPAIGN TOOLKIT*** which is a multi-part comprehensive guide detailing all aspects of constructing a successful advocacy campaign, freely available from the GRSP Publications website.

The Global Health Advocacy Incubator has published an ***ADVOCACY ACTION GUIDE*** that provides a roadmap for planning an advocacy campaign, with tools, tactics and lessons learned. It can be downloaded, free of charge from the Global Health Advocacy Incubator website

MODULE 7: Addressing potential challenges

This guide provides insight into the numerous activities necessary to effectively develop, draft and implement a motorcycle helmet standard. Once the initial motorcycle helmet standard is passed, there is still a lot of work needed to ensure successful implementation of the standard. A brief summary of those tasks is shown in Figure 20. Advocacy groups are a significant partner in the process, and this guide has identified many areas and activities in which advocacy groups may get involved to contribute to the overall success of a motorcycle helmet programme.

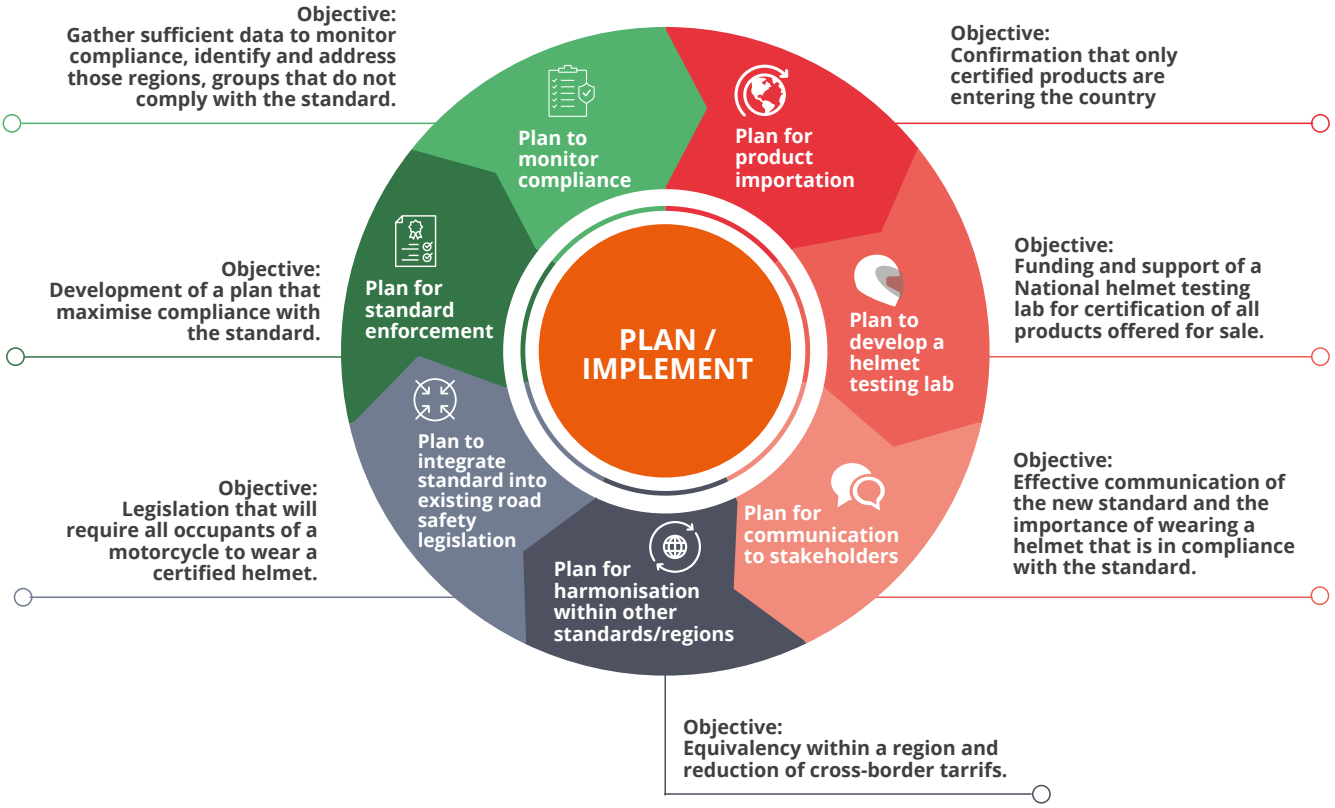

Figure 20.
Implementation plan activities and objectives following development of the helmet standard

There are a significant number of elements involved in the implementation of a motorcycle helmet standard and in the associated legislation and other legal instruments (decrees, acts, circulars, etc.). Therefore, challenges to the success of any program must be expected. Figures 21 through 26 present some of these challenges and possible solutions for consideration.

Issue	Solution
Lack of public awareness and acceptance	Develop and execute public awareness campaigns to educate the public about the benefits of certified helmet use and the importance of standards before police begin taking enforcement action. Collaborate with community leaders and influencers to promote certified helmet use and dispel myths. Collaborate with rider training and licensing agencies to provide necessary information on any new helmet standard and helmet law. Collaborate with schools and integrate road safety and certified helmet use education into school curriculums to instill good practices from a young age. Meet with parents to communicate the importance of having all riders on the motorcycle wear a properly fastened and certified motorcycle helmet.
Helmet affordability issues	Collaborate with stakeholders to provide subsidies or financial assistance to make helmets more affordable. Research and identify those companies or organisations that may have funds available to help support the objective of providing certified motorcycle helmets to all riders. Collaborate with government agencies to permit importers of certified helmets to import these products with little or no VAT tax or customs duty. Encourage manufacturers to build an in-country manufacturing facility to produce affordable yet compliant helmets, possibly through incentives or partnerships. Collaborate with stakeholders to develop and implement programmes to distribute free or low-cost helmets in high-risk areas. Research and identify potential public and private partners that will support and participate in a helmet trade-in programme.

Figure 21.
Issues and solutions related to integrating the standard into existing legislation

Issue	Solution
Initial capital investment: High initial costs for land, infrastructure, and equipment.	Secure funding through government grants, industry partnerships, or private investment.
Operational costs: Ongoing costs for staffing, equipment maintenance, and accreditation fees.	Develop a sustainable business model, including testing fees and service contracts with helmet manufacturers.
Compliance documentation: Ensuring thorough and accurate documentation for accreditation and regulatory compliance	Develop and implement comprehensive documentation practices and conduct regular internal audits to remain in compliance with ISO 17025.

Figure 22.
Issues and solutions related to establishing a helmet test laboratory

Issue	Solution
Identification of counterfeit and unqualified helmets	Develop clear and concise legislation and other legal instruments that will include the definition of a motorcycle helmet and define requirements and enforcement mechanisms. Add specific text to prevent importation of "toy motorcycle helmets".
Resource constraints: lack of sufficient resources to monitor incoming products	Develop collaboration among government agencies to maximise resources available. Invest in advanced technology and training for customs officials to improve inspection efficiency and accuracy
International trade dynamics: importers will source helmets from multiple countries, each with different documentation and quality control capacities	Develop clear and concise conformity assessment procedures and distribute these to all relevant stakeholders.

Figure 23.
Issues and solutions related to monitoring importation of certified helmets

Issue	Solution
Overcoming resistance – which can stem from cultural, economic or personal beliefs	Engage with local communities to understand and address their concerns. Provide education on the benefits of certified helmet use and addressing misconceptions. Develop programmes to make certified helmets more affordable and accessible (e.g. corporate sponsorship).
Ensuring consistency in enforcement	Develop standardised enforcement procedures to ensure uniformity. Provide regular training for law enforcement officers on the helmet law and enforcement techniques, including the need for them to always wear certified helmets when representing the enforcement agency. Monitor the performance of enforcement activities to ensure consistency.

Figure 24.
Issues and solutions related to enforcement of helmet law

Issue	Solution
Technical differences between existing motorcycle helmet standards can pose challenges to harmonisation. These differences may include variations in testing methods, performance criteria, and certification processes.	Conduct detailed technical reviews to identify and address these differences. Engage technical experts to develop solutions that balance safety, feasibility, and practicality.
Stakeholder resistance: Some stakeholders may resist harmonisation due to concerns about cost, market disruption, or loss of competitive advantage.	Address stakeholder concerns through transparent communication, stakeholder engagement, and demonstrating the long-term benefits of harmonisation. Provide support and incentives to facilitate the transition.
Regulatory barriers, such as differences in legal frameworks and enforcement mechanisms, can hinder the harmonisation process.	Work closely with regulatory agencies to align legal frameworks and develop consistent enforcement mechanisms. Provide technical assistance and capacity building to support regulatory alignment.
Resource constraints, such as limited funding, technical expertise, and administrative capacity, can pose challenges to harmonisation.	Secure funding from international organisations, governments, and industry stakeholders. Build partnerships to leverage technical expertise and administrative capacity.

Figure 25.
Issues and solutions related to standards harmonisation

Issue	Solution
Resistance to change is a common challenge when implementing a new helmet standard.	This can best be addressed by providing clear and compelling information about the benefits of the new standard to address any misconceptions and to build support. If possible, incentives, such as discounts on compliant helmets or insurance benefits may also encourage adoption.
Misinformation can rapidly undermine the effectiveness of any helmet communication campaign.	This can best be addressed by proactive communication in the form of accurate and up-to-date information that can preempt and counteract misinformation. Collaborating with fact-checking organisations and media outlets may also assist to verify and correct any false information.
Limited resources can hinder the implementation of the communication plan.	This can best be addressed by strengthening the helmet coalition and building partnerships with media outlets, NGOs, rider groups, and industry stakeholders to leverage their resources and expertise. Consider approaching all government agencies, international organisations, and private sector partners (e.g. insurance agencies and motorcycle retailers) that are involved in this project for funding to support the communication campaign.

Figure 26.
Issues and solutions related to communication planning

Closing remarks

As noted at the beginning of this document, no two regions or countries are the same and each country has its own unique set of economic, political and infrastructure conditions. Consequently, there is no single approach that will work in all jurisdictions. A complete understanding of the situation in a particular country is essential to determining the best path forward. This guide provides insight and suggestions regarding what can be done to fully implement a successful motorcycle helmet standard and reduce the significant societal and economic costs associated with motorcycle crashes, fatalities and injuries in low- and middle- income countries.

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References

1. World Health Organization, Global status report on road safety 2023, Licence: CC BY-NC-SA 3.0 IGO. Geneva, 2023.
2. Global Motorcycles Market Size, Share, and Trends Analysis Report – Industry Overview and Forecast to 2031. (2024, October 1). *Global Motorcycles Market Size, Share, and Trends Analysis Report*. Retrieved November 25, 2024, from https://www.databridgemarketresearch.com/reports/global-motorcycles-market
3. World Health Organization, Helmets: a road safety manual for decision-makers and practitioners, second edition. Geneva: World Health Organization; 2023. Licence: CC BY-NC-SA 3.0 IGO.
4. Aukema, A., Berman, K., Gaydos, T., Sienknecht, T., Chen, C. L., Wiacek, C., & St Lawrence, S. (2023). Real-world effectiveness of model year 2015-2020 advanced driver assistance systems. In *27th International Technical Conference on the Enhanced Safety of Vehicles (ESV) National Highway Traffic Safety Administration* (No. 23-0170).
5. Sisimwo, P. K., & Onchiri, G. M. (2018). Epidemiology of head injuries and helmet use among motorcycle crash injury: a quantitative analysis from a local hospital in Western Kenya. *Pan African medical journal*, *31*(1).
6. Ha, N. T., Ederer, D., Vo, V. A. H., Pham, A. V., Mounts, A., Nolen, L. D., & Sugerman, D. (2018). Changes in motorcycle-related injuries and deaths after mandatory motorcycle helmet law in a district of Vietnam. *Traffic injury prevention*, *19*(1), 75-80.
7. Ding, C., Rizzi, M., Strandroth, J., Sander, U., & Lubbe, N. (2019). Motorcyclist injury risk as a function of real-life crash speed and other contributing factors. *Accident Analysis & Prevention*, *123*, 374-386.
8. Clarke, J. A., & Langley, J. D. (1995). Disablement resulting from motorcycle crashes. *Disability and Rehabilitation*, *17*(7), 377-385.
9. Alam, K., & Mahal, A. (2016). The economic burden of road traffic injuries on households in South Asia. *PLoS One*, *11*(10), e0164362.
10. Fernandez, A. M., Li, K. D., Patel, H. V., Allen, I. E., Ghaffar, U., Hakam, N., & Breyer, B. N. (2024). Electric bicycle injuries and hospitalizations. *JAMA surgery*, *159*(5), 586-588.
11. Powered two-and three-wheeler safety: a road safety manual for decisionmakers and practitioners, second edition. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO.
12. Liu, B. C., Ivers, R., Norton, R., Blows, S., & Lo, S. K. (2003). Helmets for preventing injury in motorcycle riders. *Cochrane database of systematic reviews*, Issue 4. Art. No.: CD004333. DOI: 10.1002/14651858. CD004333.pub2.
13. Marshall, B., Nuong, N.D., Brondum, L., Truong, BV., Pitt, R., Sidik, M. (2014). *Developing an integrated campaign to address child helmet use in Vietnam: A case study*. AIP Foundation. Supported by The Atlantic Philanthropies.
14. Kim, C. Y., Wiznia, D. H., Averbukh, L., Dai, F., & Leslie, M. P. (2015). The economic impact of helmet use on motorcycle accidents: a systematic review and meta-analysis of the literature from the past 20 years. *Traffic injury prevention*, *16*(7), 732-738.
15. Reed, S. (2018). PTW Helmets, European Road Safety Decision Support System, developed by the H2020 project SafetyCube. Retrieved from www.roadsafety-dss.eu on 26.11.2024.
16. Wells, S., Mullin, B., Norton, R., Langley, J., Connor, J., Jackson, R., & Lay-Yee, R. (2004). Motorcycle rider conspicuity and crash related injury: case-control study. *Bmj*, *328*(7444), 857.
17. Melvin, J. W., & Yoganandan, N. (2014). Biomechanics of brain injury: a historical perspective. In *Accidental Injury: Biomechanics and Prevention* (pp. 221-245). New York, NY: Springer New York.
18. Robinson, M. (2019). Developing novel materials to enhance motorcyclist safety (Doctoral dissertation, Cardiff University) United Kingdom. *https://orca.cardiff.ac.uk/id/eprint/135228/1/2020RobinsonMJPhD.pdf*.
19. Scher, I. S., Harley, E. M., Richards, D., & Thomas, R. (2009). Likelihood of brain injury in motorcycle accidents: a comparison of novelty and DOT-approved helmets. *SAE Int.*, 1-6.

Appendix A

Helmet standards cited in this guide

Department of Standards Malaysia (2023). Protective helmets and visors for vehicle users – Specification – Part 1: Protective helmets (Fourth revision) (MS1-1:2023).

Bureau of Indian Standards (2015). Protective helmet for Two Wheeler Riders – Specification (IS4151:2015).

Thailand Industry Standard Institute (2014). Protective helmets for motorcycle users (TIS 369-2557).

Ministry of Science and Technology, Directorate for Standards, Metrology and Quality (2017). Protective helmets for motorcycles and moped users (TCVN 5756:2017).

Kenya Bureau of Standards (2012). Protective helmets for motorcyclists – specification (DKS 77: 2012).

Japanese Standards Association (2015). Protective helmets for motor vehicle users (JIS T 8133:2015).

British Standards Institute (1985). British Standard Specification for Protective helmets for vehicle users (BS 6658:1985).

Department of Transportation, National Highway Traffic Safety Administration (2015). Federal Motor Vehicle Safety Standards: Motorcycle Helmets (FMVSS 218).

United Nations Economic Commission for Europe (UN/ECE) (2002). Uniform Provisions Concerning the Approval of Protective Helmets and Their Visors for Drivers and Passengers of Motorcycles and Mopeds (UN/ECE 22.05).

United Nations Economic Commission for Europe (UN/ECE) (2021). Uniform Provisions Concerning the Approval of Protective Helmets and Their Visors for Drivers and Passengers of Motorcycles and Mopeds (UN/ECE 22.06).

Standards Australia/Standards New Zealand (2006). Protective helmets for vehicle users (AS/NZS 1698:2006),

Singapore Standards Council (2014). Singapore Standard Specification for protective helmets for motorcyclists (SS 9:2014).

American Society for Testing and Materials (2020). Standard Test Methods for Equipment and Procedures Used in Evaluating the Performance Characteristics of Protective Headgear (ASTM F1446:2020).

Snell Memorial Foundation (2020). Standard for Protective Gear For Use with Motorcycles and Other Motorized Vehicles (Snell M2020).

Appendix B

Illustrations related to helmet standards and test equipment

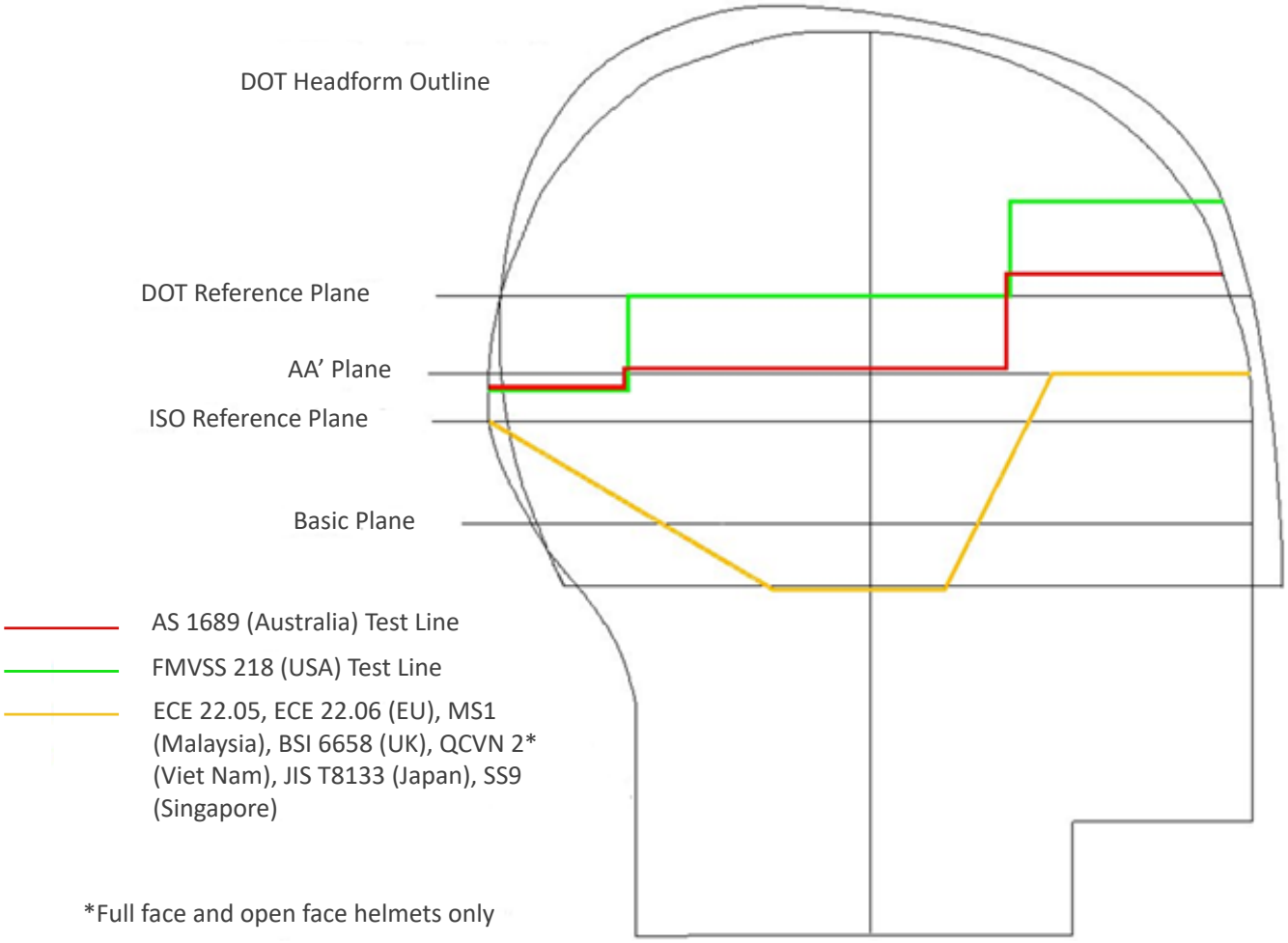

Figure B-1.
Test Lines and Coverage Requirements for Selected Motorcycle Helmet Standards
(Source: T. Smith, 2024)

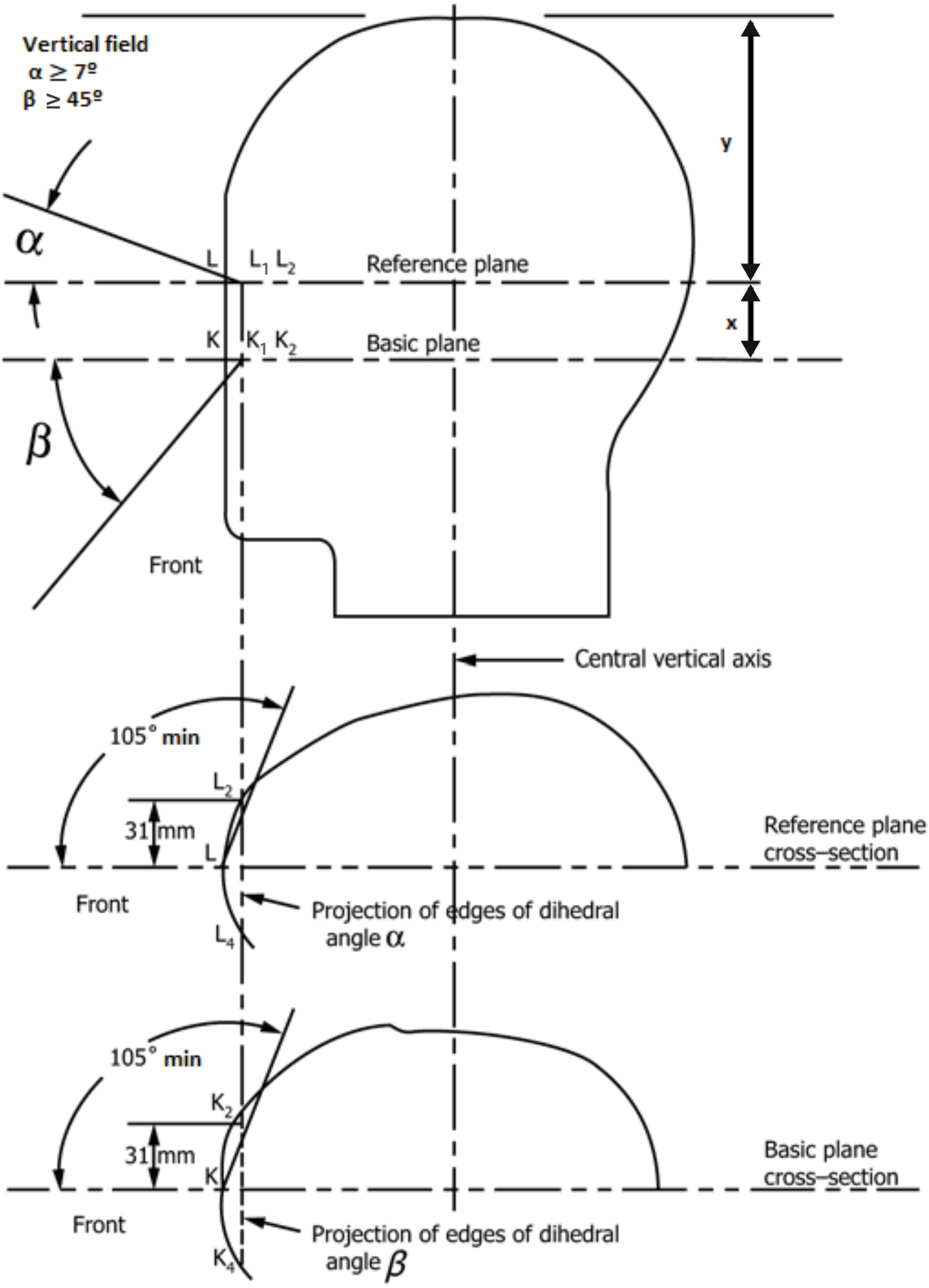

Figure B-2.
Typical Field of Vision Requirements (Source: UN/ECE 22.06)

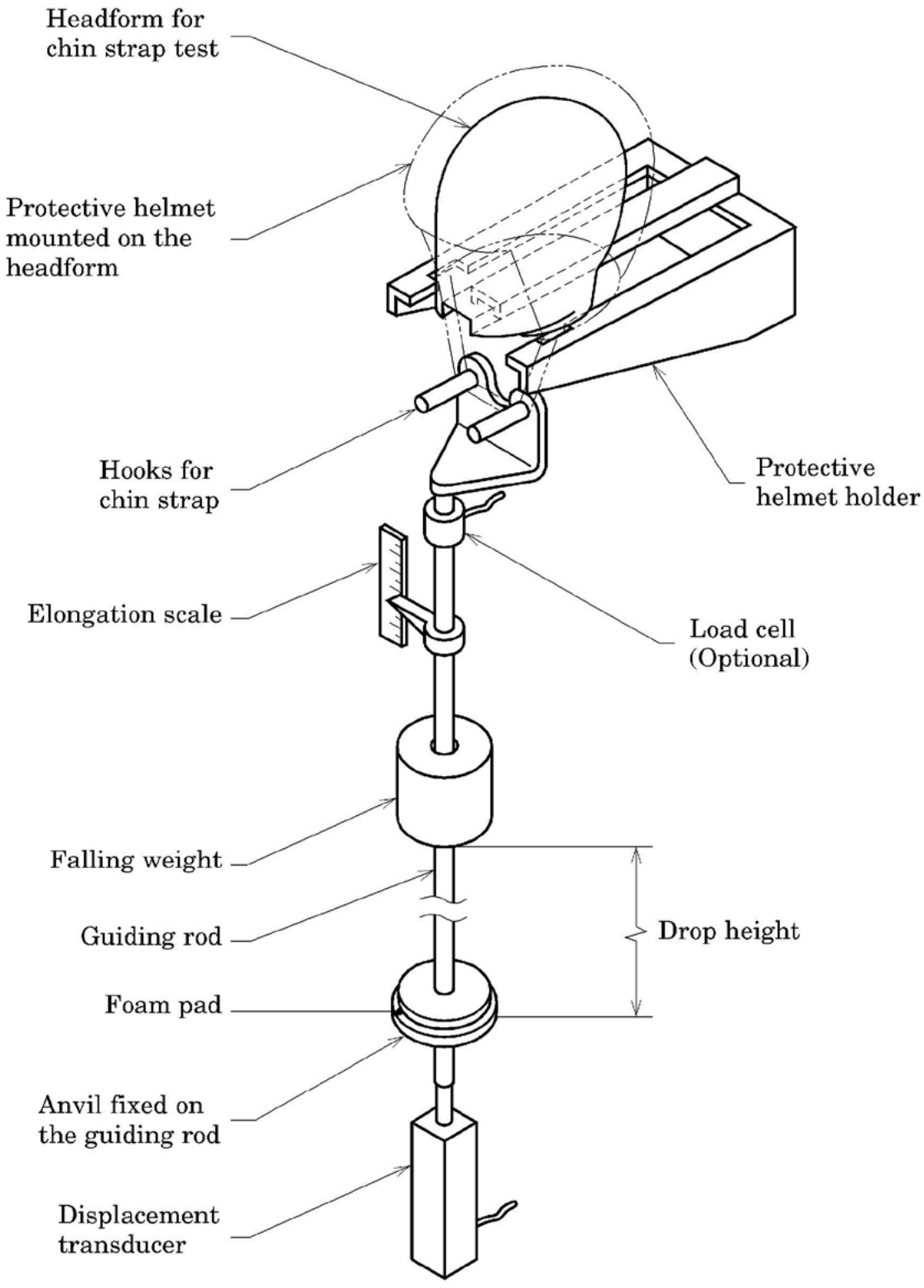

Figure B-3.
Typical Apparatus for Retention System Strength Testing (Source: JIS T8133)

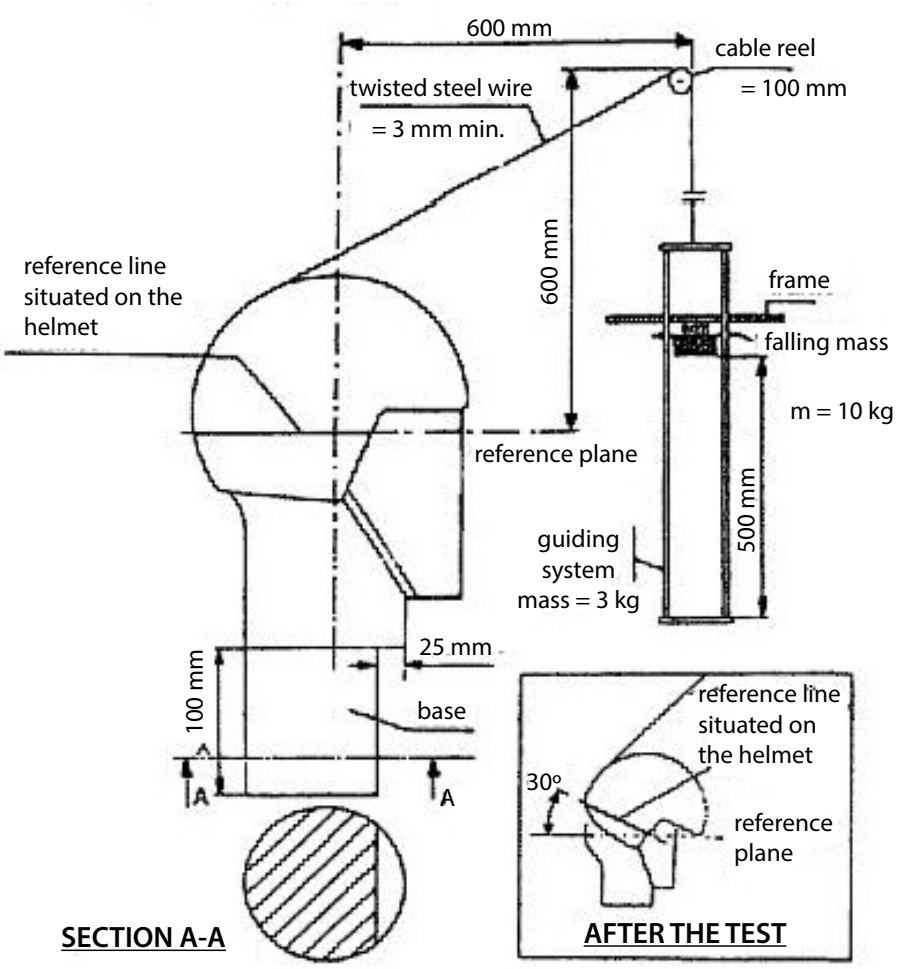

Figure B-4.
Typical Apparatus for Helmet Stability Test (Source: UN/ECE 22.06)

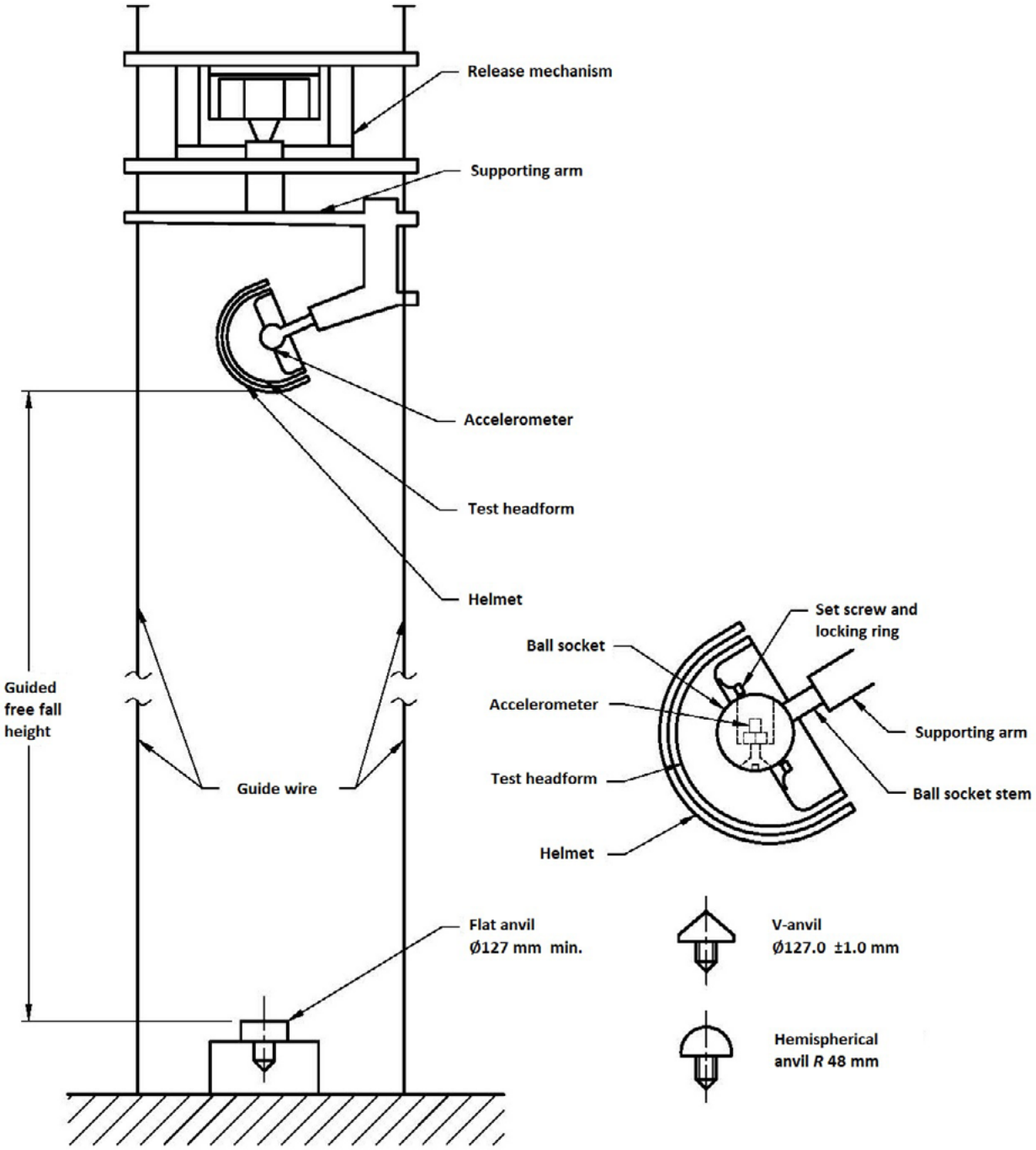

Figure B-5.
Typical Twin Wire Test Apparatus of Impact Absorption Testing (Source: AS/NZS 2512.3)

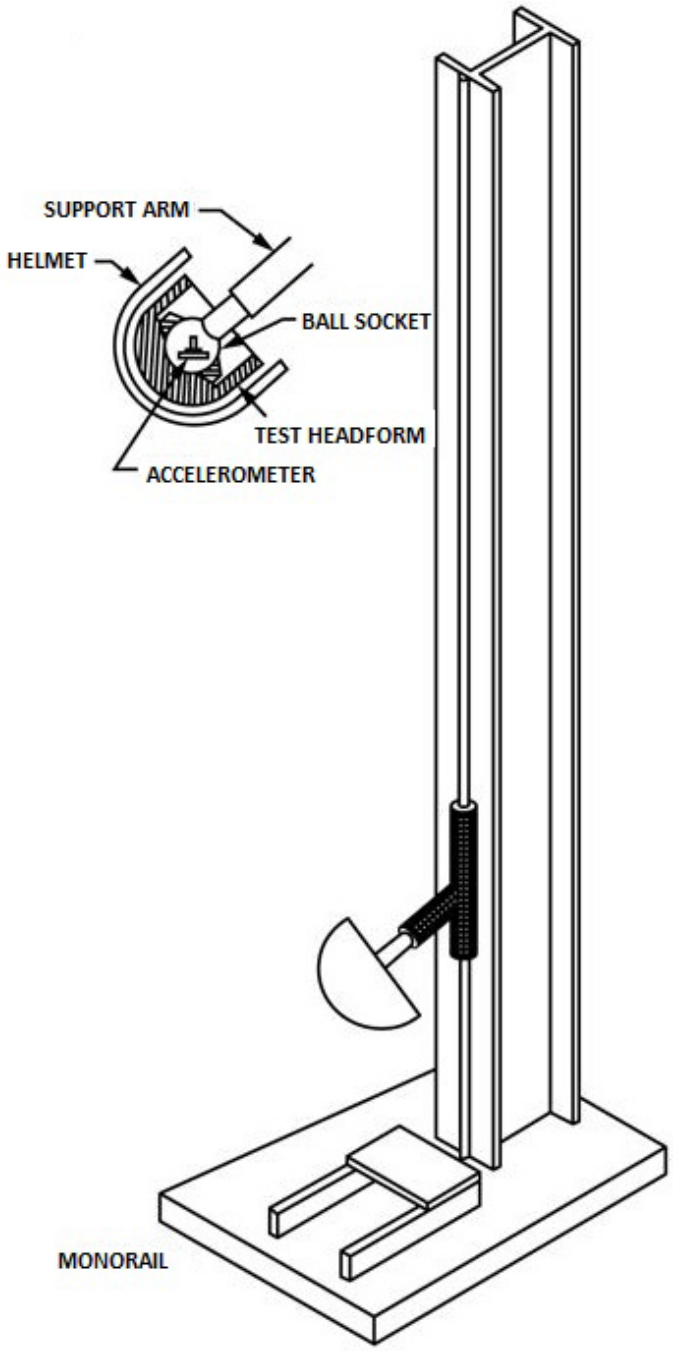

Figure B-6.
Typical monorail test apparatus (source: ASTM F1446)

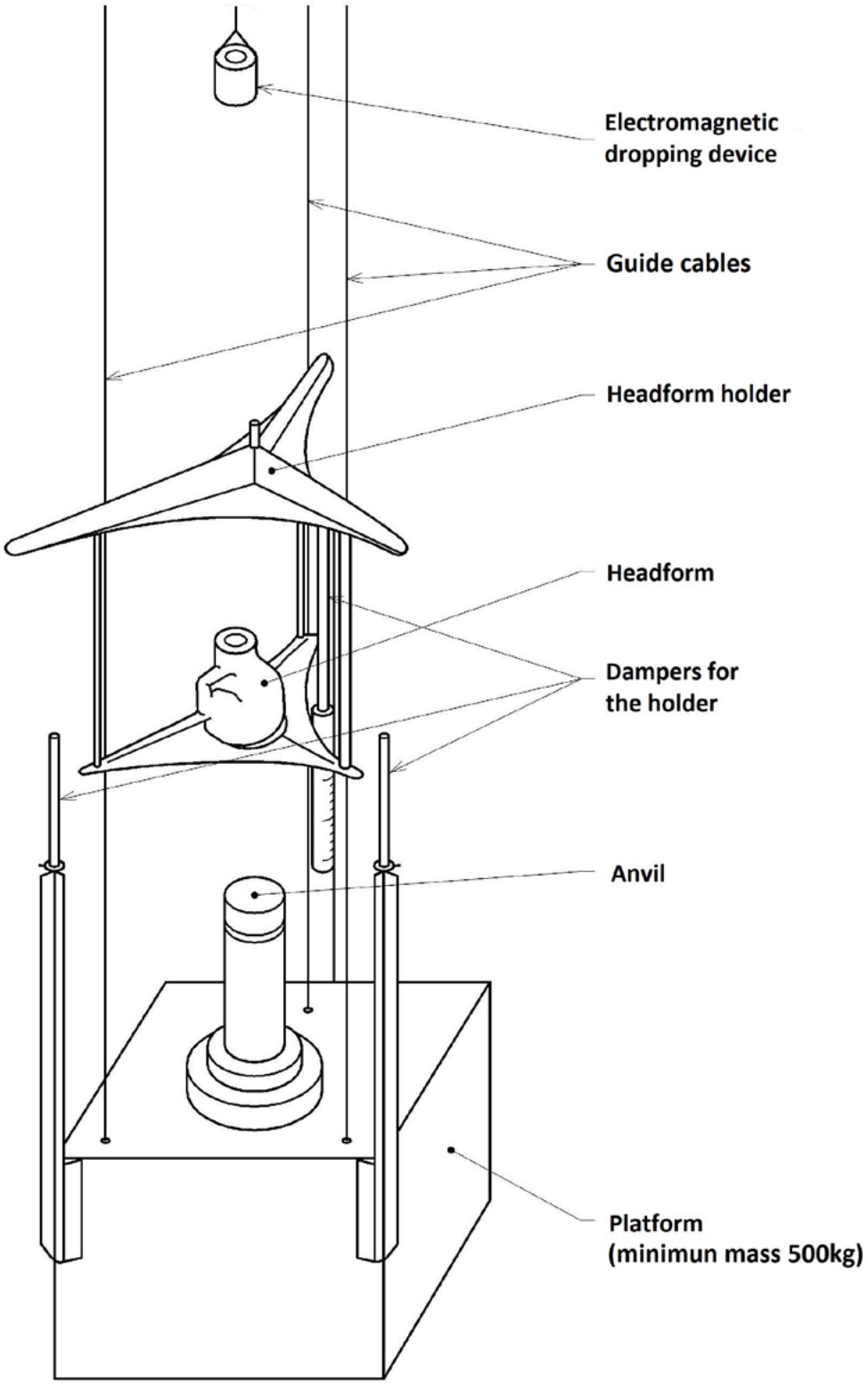

Figure B-7.
Typical free motion headform test apparatus (source: JIS T8133)

Global Road Safety Partnership

Geneva Office
c/o International Federation of Red Cross and Red Crescent Societies
Chemin des Crêts, 17
1209 Geneva
Switzerland
Email: grsp@ifrc.org
Tel: +41 22 730 4249
Fax: +41 22 733 0395

Kuala Lumpur Office
Menara Tokio Marine Life,
Level 10,
189 Jalan Tun Razak,
50400 Kuala Lumpur,
Malaysia
Tel: +603 9207 5700

Budapest Office
Budapest,
Váci út 30. 4.em.,
1132 Hungary
Tel: +36 1 888 4500

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