



Road Safety Management Capacity Assessment for Vanuatu

Final Report



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- Public Land Transport Authority (PLTA);
- Public Service Commission (PSC);
- Public Works Department (PWD);
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This report is an activity within a broader World Bank executed Advisory Services and Analytics (ASA), which aims to gain a holistic and thorough understanding of the road safety management capacity of three selected Pacific Island Countries (PICs)—Samoa, the Solomon Islands and Vanuatu—in order to support their respective governments to develop national strategies and plans of action to improve road safety outcomes. The ASA is being funded by a Global Road Safety Facility (GRSF) grant from United Kingdom Agency for International Development (UK AID).

ABBREVIATIONS

ADB	Asian Development Bank
AFP	Australian Federal Police
AG	Attorney General
APRSO	Asia Pacific Road Safety Observatory
ASA	Advisory Services and Analytics
BAC	Blood Alcohol Concentration
CEO	Chief Executive Officer
CIR	Customs and Inland Revenue Department
CMS	Court Management System
CoM	Council of Ministers
DFAT	Australian Department of Foreign Affairs and Trade
DG	Director General
DHIS	District Health Information System
DOFT	Department of Finance and Treasury
DRIVER	Data for Road Incident Visualization Evaluation and Reporting
EAP	East Asia and Pacific
GBD	Global Burden of Disease
GDP	Gross Domestic Product
GLS	Graduated Licensing System
GPS	Global Positioning System
GoV	Government of Vanuatu
GRSF	Global Road Safety Facility
HIS	Health Information System
ICD	International Classification of Diseases
iRAP	International Road Assessment Program
ITF	International Transport Forum
JICA	Japan International Cooperation Agency
MIA	Ministry of Internal Affairs
MIPU	Ministry of Infrastructure and Public Utilities
MoET	Ministry of Education and Training
MoH	Ministry of Health
MJCS	Ministry of Justice and Community Services
MLNR	Ministry of Lands and Natural Resources
NCD	Noncommunicable Disease
NCPC	National Coordinating Projects Committee
NPP	New Project Proposal
NGO	Nongovernmental Organization
NRSC	National Road Safety Committee
OGCIO	Office of the Government Chief Information Officer
OECD	Organization for Economic Cooperation and Development
PC	Parliamentary Council
PIC	Pacific Island Countries

PIMS	Police Information Management System
PLTA	Public Land Transport Authority
PSC	Public Service Commission
PWD	Public Works Department
R4D	Roads for Development Program
R & D	Research and Development
RBT	Random Breath Test
RIMS	Road Inventory Management System
RSA	Road Safety Audit
RSMCA	Road Safety Management Capacity Assessment
SG	Solicitor General
SLO	State Law Office
SSA	Safe System Assessment
Sum4All	Sustainable Mobility of All
TA	Technical Assistance
TOR	Terms of Reference
UK AID	United Kingdom Agency for International Development
UN	United Nations
USP	University of South Pacific
UNECE	United Nations Economic Commission for Europe
US\$	United States Dollar
VCCI	Vanuatu Chamber of Commerce and Industry
VC RTP	Vanuatu Climate Resilient Transport Project
VLRC	Vanuatu Law Reform Commission
VNSO	Vanuatu National Statistics Office
VPF	Vanuatu Police Force
WHO	World Health Organization

EXECUTIVE SUMMARY

Background

The Road Safety Situation in Vanuatu

The provision of safe and accessible road and transport infrastructure to all citizens of Vanuatu is an aim that underpins the Government of Vanuatu's (GoV) National Sustainable Development Plan 2016–2030 (GoV 2016). Improved accessibility and mobility are integral to sustained and inclusive economic growth in Vanuatu. GoV are taking positive action to support accessibility, setting a target to provide basic road access to 70 percent of all rural ni-Vanuatu by 2040. Further, ambitious upgrade targets of existing roads will see all 'core' roads sealed in urban areas by 2030 and in rural areas by 2040. This rapid ongoing improvement and rehabilitation of the road network will lead to increases in travel speeds and consequently increases to the crash risk. As population, and likely motorization, increases in Vanuatu, the number of ni-Vanuatu exposed to the crash risk will also rise. These factors absolutely must be considered in anticipation of, and parallel to, the expansion and upgrade of the Vanuatu road network, and warrants a decided effort to begin addressing road safety in Vanuatu.

There is reason to believe that the true number of road crash fatalities and serious injuries in Vanuatu are high for the East Asia and Pacific (EAP) region. The World Health Organization (WHO) estimated that the number of road crash fatalities in Vanuatu in 2016 was 43 (WHO 2018) and the Global Burden of Disease (GBD) estimated 51 fatalities (World Bank 2020). These estimates are high in comparison to other countries in the region, especially given the lower population and motorization rate in Vanuatu compared to the regional average. The road crash fatality rate per 100,000 population in Vanuatu is 18.2 (based on the GBD estimate), compared to 15.7 in Micronesia and 10.4 in Kiribati, which are the best performing countries in the EAP region (World Bank 2020). For serious injuries, World Bank estimates that in 2016, a total of 645 serious injuries occurred in the country (World Bank 2020). However, the in-country records do not reflect this and instead imply that road crashes are not a major cause of fatality and serious injury in Vanuatu. In 2016, official crash records show that nine road crash fatalities had occurred in the country – and that this number was relatively consistent for the three preceding years (WHO 2018). According to Vanuatu Police Force (VPF), the main causes of crashes are speeding and drink-driving.

In 2016, at least 50 percent of crash fatalities in Vanuatu were pedestrians (World Bank 2020). This number is higher than the average share of pedestrian fatalities in the region and in low- and middle-income countries generally. Additionally, according to the Public Land Transport Authority (PLTA), public transport vehicles are reported to have been involved in a high number of road crashes. This is a particular concern as public transport is relied upon by the majority of the population.

Road crashes are currently resulting in high costs to an already strained national economy. The estimated level of annual economic cost to Vanuatu of road crash fatalities and serious injuries, based on the WHO estimate of 43 fatalities and World Bank estimate of 645 serious injuries, is between US\$32.1 million and US\$58.9 million. The average of this equates to more than five percent of the country's 2016 gross domestic product. This indicates the scale and significance of the road safety problem for the Vanuatu economy and community. It is also important to consider that road safety performance impacts on visitors and tourists to Vanuatu, who are crucial to the country's economy.

Scope of the Road Safety Management Capacity Assessment

This Road Safety Management Capacity Assessment (RSMCA) seeks to gain a broad understanding of GoV's road safety management capacity in order to support the country's development of a national strategy and plan of action to improve road safety outcomes, and subsequently implement those actions effectively. The RSMCA follows the seven critical road

safety institutional management functions (Bliss and Breen 2013) to identify key challenges and provide recommendations for improvement in road safety management, and similarly addresses the Safe System¹ pillars for the interventions level. The seven institutional management functions include: results focus; coordination; legislation; finance and resource allocation; promotion and advocacy; monitoring and evaluation, and research and development of knowledge transfer. The Safe System pillars include road safety management; safe roads and mobility; safe vehicles; safe road users, post-crash care; and safe speeds.

As such, the RSMCA outlines key findings and recommendations relating to both the road safety institutional management functions within Vanuatu, and the Safe System Approach, whilst also identifying targeted priority next steps to address road crash death and serious injury in the country.

Key Findings on Road Safety Management Capacity

Institutional Management Functions

Institutional management arrangements for road safety in Vanuatu are yet to be established. More details for each institutional management function, including key recommendations, are provided below.

Results focus and coordination

- 1. There is currently no lead agency coordinating road safety efforts in Vanuatu.** It is recommended that the Public Works Department (PWD) take the road safety lead agency function in Vanuatu due to it being responsible for a number of the core components of road safety—planning and implementation of routine and periodic maintenance of road infrastructure, the delivery of new (and upgraded) road assets, and vehicle roadworthy testing.
- 2. Largely as a result of no lead agency presence in Vanuatu, there is currently no governance or decision-making structure to encourage a combined results focus across government and to facilitate coordinated and targeted action to improve road safety outcomes in Vanuatu.** Results focus includes leadership, lead agency, governance structure, roles and responsibilities and resourcing of ministries, coordination amongst ministries, target setting, data systems and data analysis, strategy, action plans and research framework activities. It is recommended that as a first step to facilitate these required governance arrangements, a working group is established to make recommendations and an executive group (operating as a National Road Safety Committee) is established to make decisions. PWD as the lead agency would provide secretariat support to these two committees, and expanded policy development support in due course. In time, an advisory group and ministerial group could be established to provide further governance support.
- 3. Given GoV is at the beginning of its road safety journey, there is currently no vision, strategic direction, or action plan for road safety in Vanuatu.** The establishment of a lead agency, working group and executive group will enable GoV to develop a vision, strategy and in time, targets, working towards the ultimate goal to eliminate road crash fatalities and serious injuries in Vanuatu.

Legislation

- 1. There are many areas for improvement in the existing legislation, which are required to better support road safety outcomes.** Critical intervention related regulatory gaps include no blood alcohol limit for drivers; no allowance for use of speed detector equipment; no vehicle import safety regulations; and no rear seatbelt wearing requirement. The review and update of aspects of the Road Traffic Control Act (2016) to strengthen behavior change measures to reduce fatalities and serious injuries should be treated as a priority. Two new draft Land Transport

Bills, prepared by the Customs and Inland Revenue Department (CIR), will address some deficiencies in land transport law in Vanuatu, including items relating to vehicle registration and licensing and seatbelt regulations.

2. **The legislative reform and drafting process in Vanuatu appears sound, however this should be regarded as a continuous improvement opportunity with regular (often minor) amendments to legislation and implemented regulation.** A number of priority interventions identified in section 3 of this report will require legislative action and many existing measures will require ongoing legislative, regulatory and systems adjustment and strengthening to improve their effectiveness. These include legislation to enable the use of speed guns; limit the maximum age of used vehicles imported to Vanuatu and introduce stricter vehicle safety regulations; require the use of seatbelts and child restraints; and introduce a legal Blood Alcohol Concentration (BAC) limit for drivers. The coordination arrangements recommended above will assist in obtaining shared support across the key road safety agencies for any new regulations, legislation or whole of government systems augmentation.

Funding and resource allocation

1. **Limited funding is currently made available in Vanuatu for investment in improving road safety outcomes.** For road safety to be strengthened as a primary government priority, it should be supported by adequate annual budget allocations. There are also significant requirements to expand enforcement resourcing in VPF and to eventually fund dedicated road safety positions within PWD. This needs to be supported by road safety training (knowledge and skills) to relevant people.

Beyond this, the two key areas of investment required are adequate recurrent road safety budgets within ministries and additional investment funding to support programs and projects which will deliver reduced fatalities and serious injuries. The preparation of business cases for investment in road safety interventions is the critical approach required for achieving funding and resourcing support. The basis for preparation of these business cases should be negotiated with the Department of Finance and Treasury.

The health system will also require funding for the establishment and ongoing improvement of trauma care facilities and improved post-crash care response.

Promotion

1. **There is a need to inform senior level officials in the public sector and executives in the private sector on the scale of the road safety problem in Vanuatu and the evidence-based solutions available to reduce crash risk.** This can potentially be done through a focused, informed and ongoing dialogue. The international approach to road safety has evolved in the past decade. Road safety was previously considered the responsibility of individual road users, however in the internationally recognized safe system approach, road safety is a shared responsibility, including those that design, build, operate and use the road system. The system also acknowledges that people make mistakes and are fragile. Thus, road trauma should not be accepted as a by-product of transport. Senior officers and parliamentarians need to be informed about these major shifts in thinking and approach to understand these changes and reflect upon the consequences for effectively advancing safety progress. Without an understanding of the safe system approach, road safety budget prioritization, policy development and decision-making can be difficult.

Monitoring and evaluation

1. **Beyond discrete data collected by VPF and Ministry of Health (MoH) (using Police Information Management System (PIMS) and District Health Information System (DHIS), respectively), there is no crash data available in Vanuatu.** Monitoring and evaluation is a crucial function to allow understanding of the magnitude of

the road safety problem, prioritize resources, design cost-effective solutions and monitor road safety performance pre- and post-interventions. The collection, analysis and sharing of road safety data, including crash data, is required to perform this function.

2. **Data is not regularly shared across GoV.** A critical issue at present is difficulties in sharing vehicle registration and licensing data in a timely manner between VPF and CIR (who currently house the data). Currently, VPF must write to the Director General (DG) of CIR to obtain records for road traffic offenders – taking approximately two weeks for the request to be processed. The CIR is in the process of addressing this problem by upgrading the licensing and vehicle registration database. An immediate consideration for GoV should be to define a road crash data collection process to achieve a reliable and accurate dataset of road crashes, the most crucial of which are data on fatalities and serious injuries. This process should maximize the use of existing resources such as the PIMS and DHIS and initial action should seek to systematically gather and analyze all available police road crash data over the last five years. This will allow for the identification of gaps in road safety data collection. In the future, a national crash database system should be developed.

Research and development and knowledge transfer

1. **Currently in Vanuatu there is no road safety research and development to contribute to policy and program development or public debate.** This is an important function as it provides independent evidence-based investigation and evaluation such that GoV and the community can be confident that measures are delivering projected fatality and serious injury reduction benefits. The capacity of the University of South Pacific in Port Vila should be leveraged to support these efforts. There is also an abundance of useful material available through the Global Road Safety Facility that could be utilized by GoV. Similarly, no transfer of knowledge between ministries or organizations, including no sharing of road safety data, is occurring. The establishment of the management and governance arrangements described above should aid in enabling this.

Summary of Institutional Management Functions Recommendations

The recommended priority activities for the immediate to medium term (next five years) are listed below. These activities will help to position GoV to begin successfully implementing interventions and monitor progress.

- Agree which organization will take on the lead agency function;
- Install required governance arrangements with agreed terms of reference, including a working group (to make recommendations) and an executive group (to make decisions or seek Ministerial/ Cabinet agreement);
- Adopt a basic road safety activity plan to implement;
- Develop, resource and implement basic road safety training (knowledge and skills) to relevant people and ministries;
- Adopt the currently proposed Land Transport Bills;
- Establish a dedicated road safety position in PWD and additional personnel in VPF to adequately undertake the enforcement task;
- Seek to include road safety activities in departmental budgets (PWD, VPF, PLTA, MoH);
- Systematically gather and analyze all available police road crash data over the last five years;
- Implement a road crash investigation training program for VPF;
- Conduct an in-depth data assessment to identify gaps in road safety data collection and develop technical and institutional recommendations to achieve better data;

- Promote improved road safety management arrangements and the high benefit to cost of potential interventions to ministers and Cabinet to drive action;
- Develop road safety awareness within ministries and at Cabinet level;
- Review the Road Traffic Control Act and amend where required;
- Form an advisory group to provide input to the working group and executive group; and
- Adopt a road safety strategy to 2030.

Interventions within a Safe System Approach

A review of road safety management capacity at the intervention level (developing and implementing new measures) identified issues relating to the safe system intervention pillars. The findings of the RSMCA pertaining to each safe system pillar is summarized below.

Road Safety Management (Pillar 1)

The enabling environment for road safety improvement is yet to be established through road safety management mechanisms in Vanuatu. Management skill in leading the strengthening of institutional functions and developing the process of analysis of crash data to identify and implement interventions in a prioritized cost-effective manner will be critical. The formation of adequate road safety management processes and the identification of a lead agency to coordinate road safety management functions will also allow for the preparation of a priority activities plan, and when knowledge permits, a national road safety strategy and action plan. Establishing appropriate levels of funding, through considered promotion upwards to senior government officials, when informed evidence-based business cases can be prepared and presented, and developing monitoring and evaluation of interventions and overall performance over time are also critical road safety steps.

Safe Roads and Mobility (Pillar 2)

PWD are the agency mandated to coordinate and manage safer roads and mobility. However, PWD is currently faced with the challenge of providing basic road access to 70 percent of all rural ni-Vanuatu by 2040, while at the same time maintaining the deteriorating road network in the urban areas. As road standards and maintenance are improved it is critical that the planning and design of roads in Vanuatu proceeds with road safety as a fundamental commitment through a structured application of simple safety measures. Currently, there are no formally adopted design standards used for road design in Vanuatu. Senior members of PWD are well-informed on the need for road safety audits at the design stage, during construction, and post-construction, however PWD engineers are currently inexperienced in these areas and require training. PWD should make a concerted effort to improve the segregation of pedestrians and vehicles at highly pedestrianized locations. This is critical given the high proportion of pedestrians involved in road crashes. In addition, safe crossing facilities, speed management and the provision of safe bus stop facilities, given the high number of public transport related crashes, should be an early focus. Retrofitting activities to improve road safety as part of PWD's maintenance program is already being considered by GoV through the Public Roads Policy (GoV 2019), and over time, with more knowledge and data, this knowledge development can support implementation of mass action and blackspot programs. Consideration of road safety on all new road projects is critical and should be supported by all donors and international partners implementing new infrastructure investment projects in Vanuatu. The intention to do no added harm in operating safety terms on new infrastructure projects needs to be a minimum starting point. It is challenging but essential if reductions are to be achieved in fatalities and serious injuries.

Safe Vehicles (Pillar 3)

There are currently no requirements for the maximum age or required safety features of vehicles that can be imported into Vanuatu. Public transport vehicles in Vanuatu consist of taxis, tour buses, buses and other forms of ‘common transport’ (flat-bed trucks). Typically, 15-seat vans act as public transport buses in urban areas and open trailer flat-bed trucks do so in the provinces. Annual inspections are conducted on all vehicles by PWD against requirements of the Road Traffic Control Act (2006). A record of all vehicles imported to, and registered in, Vanuatu is kept by CIR. Approximately 9,000 vehicles are registered in Vanuatu annually. It is recommended that amendments to legislation for importation controls on vehicles and to the vehicle inspection process be made to improve the safety of vehicles in Vanuatu. This should include restricting the maximum age of used vehicles imported to no more than eight years and requiring all imported vehicles to have seat belts fitted for every seat. In the long term, GoV should introduce regulations to also require all imported vehicles to meet United Nations Economic Commission for Europe (UNECE) vehicle safety regulations, and other relevant regulations for buses and heavy vehicles.

Safe Road Users (Pillar 4)

In general, road user awareness of road rules and safe practices across key user types—pedestrians and drivers—is low in Vanuatu. Drivers are given a learner license in Vanuatu from age 18 (general motor vehicles) following the completion of an application and medical certification. Within a one-year period, applicants can go for their test of competence examination (practical test) at a police station to get their driver’s license. There are no associated requirements for the minimum number of hours to be logged, or specific experience requirements. There are experience requirements in place to hold a heavy vehicle driver’s license or common vehicle driver’s license, and more stringent medical examinations are required for tourism vehicle operators. In the medium term, Vanuatu should aim to expand its current learner permit arrangements for novice drivers to require a minimum of 60 hours of supervised driving practice under the supervision of a fully licensed driver (not a novice driver) before the practical examination can take place. Other suggested components that could form part of a three-year graduated licensing system (GLS) include limiting passengers to one peer-aged passenger at a time in the first year and, importantly, introducing and enforcing a zero BAC limit for the three-year period.

Road safety education in schools should focus on where and how to safely cross a road, as well as bicycle riding safety, including guidance to never ride without a helmet and to avoid the roads where there are footpaths available. This education should be practical, not theoretical—for instance, taught on actual roads, to appropriate age groups. Evidence shows that this is a more effective way to encourage behavior change. Considered communication to the community, recommended through municipal wardens, will be an effective way to advance the acceptability of any proposed changes in legislation, while at the same time improving general community awareness of road safety issues.

The public transport model in Vanuatu needs to be improved. At present, public transport operators are associated with poor driver behavior. Public transport drivers’ income is dependent on the number of passengers that they can transport. This revenue incentive based operational model encourages drivers to compete for passengers, resulting in risky driving behavior. Further in rural areas, the use of flatbed trucks as a mode of public transport is very risky. These types of vehicles either don’t provide any or provide limited protection by the vehicle of load area occupants. Further those who are utilizing this service are not properly restrained. The consequences of these combined situations in a crash can be deadly.

While acknowledging the equipment and staff resource constraints on VPF and the current legislative inhibitors (no allowance for use of speed radar, laser equipment or alcohol breathalyzers, and no BAC limit), traffic law enforcement requires strengthening.

Post-Crash Care (Pillar 5)

Post-crash care is currently limited by the number and coverage of ambulances with appropriate equipment, the lack of trained paramedics, and the level of care available at health facilities around Vanuatu. Ambulance services (both public and private) only operate on Efate and Santo. The privately-owned ambulance service employs trained paramedics and operates to high international standards, whilst the drivers of the government-operated service are trained

in first aid at most. There are inequalities in pre-hospital emergency care due to the cost of the private service being too high for the majority of ni-Vanuatu. The provision of training for local health staff as paramedics is critical to improve the government-operated pre-hospital medical care. As more roads are developed on other islands, the ambulance service should be expanded there. Health facilities range from main hospitals in Port Vila and Santo to aid posts in the community. Critical emergencies are typically referred to Vila Central Hospital for emergency care. Resourcing constraints on medical staff are significant, impacting triage and patient information data collection. Rehabilitation capacity for long-term care is limited to basic physiotherapy. Dedicated attention to the strengthening of the health system throughout all of Vanuatu is vital.

Safe Speeds (Pillar 6)

Speed limits in both urban and rural areas of Vanuatu are relatively aligned with safe system principles. Speed limit signage is present on urban roads and to some extent on rural roads in Vanuatu, however targeted speed limit enforcement is not currently occurring. Speed humps are progressively being installed by PWD at highly pedestrianized areas and have been received well by the community. Time-based speed limits around schools are recommended to be installed in the longer-term. Public bus speed limit compliance is a critical component of road safety that needs to be actively monitored and enforced in Vanuatu, given their prevalence in road crashes and the high exposure of ni-Vanuatu to these types of crashes.

Proposed Road Safety Priority Activities for Vanuatu

There are priority activities required to be actioned by GoV in order to plan, agree and action measures to improve road safety in Vanuatu. Critical to the commencement of a road safety program in Vanuatu is the establishment of necessary management and governance arrangements to drive the road safety agenda. This must be accompanied by regulatory frameworks that support road safety roles and responsibilities and intervention activity.

Through ongoing support from international partners with an existing relationship with GoV, there should be no hesitation to begin investigating options to train and resource relevant people and ministries to drive road safety action. Small-scale road safety interventions should also begin to occur on any new road projects planned by donors and GoV.

In recognition of the considerable task ahead of GoV in terms of knowledge development and addressing resourcing constraints, the recommended road safety vision for Vanuatu by 2025 is for the implementation of these required road safety management arrangements, as well as regulatory frameworks, on the journey towards the elimination of road crash fatalities and serious injuries. Following this, GoV will be equipped to set road safety targets and pursue a longer-term strategy. Ongoing support and encouragement from international partners should be provided to this important agenda.

Over time, the strategic direction for road safety in Vanuatu should look to incorporate:

- Safe system awareness within government and the community;
- A road crash data system and associated analysis; and
- Progressively, priority activities.

The priority activities recommended for attention in the immediate to medium term action (next five years), in line with the safe system pillars are described below:

- Creating the required enabling environment for road safety management, through.
 - Installing required governance arrangements including a nominated lead agency, a working group (to make recommendations) and an executive group (to make decisions);
 - Adopting a basic road safety activity plan to implement;

- Developing, resourcing and implementing basic road safety training (knowledge and skills) to relevant people and ministries;
- Reviewing and adopting any legislative or regulatory changes where required;
- Seeking to include road safety activities in departmental budgets (PWD, VPF, PLTA, MoH);
- Systematically gathering and analyzing all available police road crash data over the last five years; and
- Conducting an in-depth data assessment to identify gaps in road safety data collection and develop technical and institutional recommendations to achieve better data.
- Creating safer road infrastructure, through:
 - Training PWD and (and private consultants) in assessing and designing road safety treatments;
 - Beginning to implement an annual blackspot treatment program, reflecting safe system principles;
 - Beginning to implement mass action treatments; and
 - Training PWD in skills to develop a costed evidence-based blackspot treatment program.
 - Creating a safer vehicle fleet, through:
 - Legislating to introduce regulations to require all imported vehicles to meet UNECE vehicle safety regulations; and
 - Legislating to limit the maximum age of used vehicles imported to Vanuatu to no more than eight years and support with appropriate vehicle inspection processes for imports.
- Creating safer road users, through:
 - Legislating to enable use of speed guns for speed enforcement by VPF, procuring adequate speed guns and training VPF to task speed compliance operations to alter non-compliant driver behaviors;
 - Legislating to limit the BAC level for vehicle drivers;
 - Training municipal wardens to use their community influence to deliver road safety awareness education;
 - Introducing seat belt wearing legislation requiring belts to be worn in all seats including rear seats where belts are fitted in existing vehicles;
 - Introducing legislation requiring child restraint use for young children; and
 - Beginning to review the unsafe carriage of passengers in unprotected load areas of light trucks and identify measures to further reduce this crash risk.
- Creating improved emergency post-crash care, through:
 - Expanding emergency ambulance care to reduce retrieval times, including increasing the number of trained paramedics.
- Creating safer speeds on the road network, through:
 - Installing speed limit signage in accordance with legislation on both urban and rural roads; and
 - Resourcing the progressive installation of pavement platforms and other traffic calming measures where lower speeds are required in higher pedestrian areas.

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REVIEW DESCRIPTION

STUDY SCOPE

The Road Safety Management Capacity Assessment (RSMCA) is an activity within a broader World Bank executed Advisory Services and Analytics (ASA), which aims to gain a holistic and thorough understanding of the road safety management capacity of three selected Pacific Island Countries (PIC)—Samoa, the Solomon Islands and Vanuatu—in order to support their respective governments to develop national strategies and plans of action to improve road safety outcomes.

The ASA is being funded by a Global Road Safety Facility (GRSF) grant from the United Kingdom Agency for International Development (UK AID). GRSF, a global partnership program administered by the World Bank, was established in 2006 with a mission to help address the growing crisis of road traffic deaths and injuries in low and middle-income countries. The GRSF strategic objectives are described in Figure 1. The GRSF grant will help the Government of Vanuatu (GoV) to have a clear image of their road safety situation, risks and challenges. To ensure sustainability, best practice road safety knowledge will be shared with local stakeholders, through capacity-building and awareness-raising activities.



Figure 1: Global Road Safety Facility strategic objectives (GRSF 2019)

The key objectives of this assessment are as follows:

- Utilize GRSF recommended methodology to gain a thorough understanding of road safety management capacity
- Assess institutional management arrangements as an important focus of the analysis of the road safety system in Vanuatu
- Assess road safety management capacity at the intervention level
- Suggest next steps for establishing a national road safety vision and strategic direction, and what priority activities to undertake
- Provide capacity-building on evidence-based road safety measures to ensure success and sustainability, with a focus on vulnerable road users such as women, children, the poor, and persons with disabilities.

REVIEW METHODOLOGY

The meetings undertaken in this assessment were carried out in accordance with the World Bank GRSF Capacity Review Guidelines, and the Safe System Approach. The level of investigation was strategic and jurisdictional road safety management capacity was assessed with reference to three best practice dimensions: results, interventions and institutional management functions, as shown in Figure 2. The intervention level is made up of the Safe System pillars. Significant results require reforms to institutional management functions and new interventions.

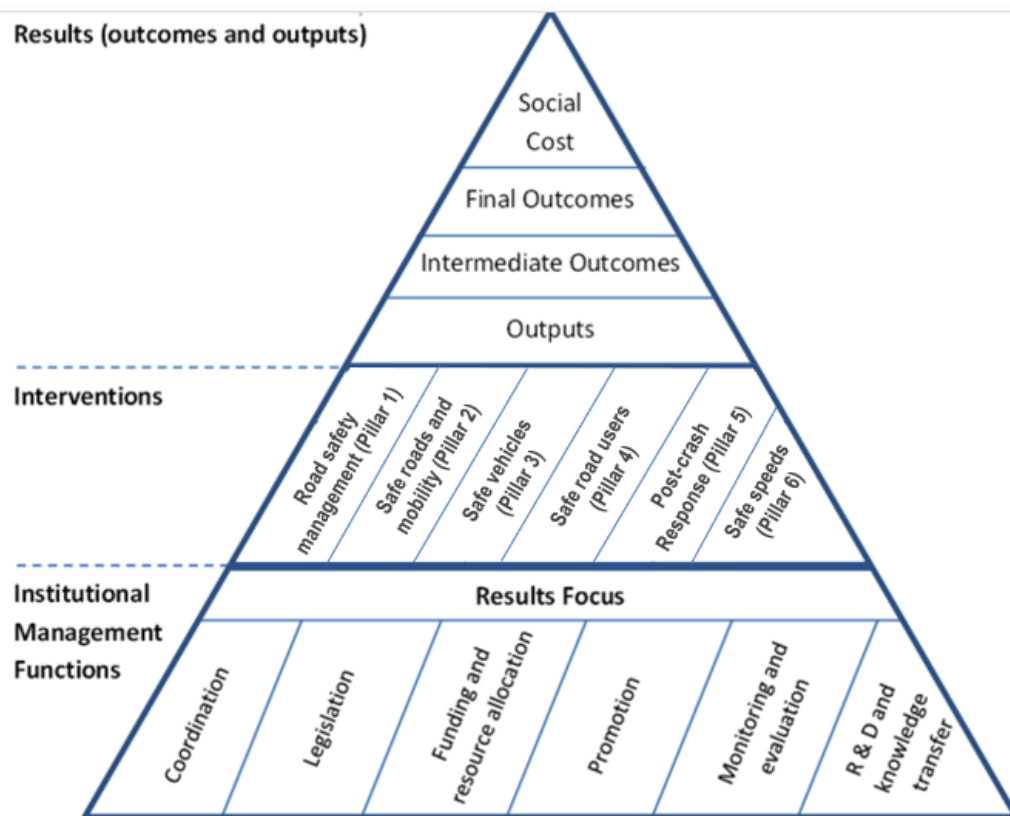


Figure 2: The Road Safety Management System (Modified from Bliss and Breen 2009)

The World Bank GRSF Capacity Review Guidelines contain several detailed checklists (numbered one to 12), which are to be applied in any country review of road safety management capacity. These completed checklists for Vanuatu, as well as further details on the methodology applied in this review, are included as appendix A and B.

The guidelines also promote the Safe System Approach (described in further detail in appendix B), which has been adopted by the United Nations as the basis for the Decade of Actions (2010 to 2020 and 2021 to 2030), and is widely applied at various levels of development and understanding around the world. A Safe System is based on the premise that road crashes are both predictable and preventable, and that it is possible to move towards zero road deaths and serious injuries. It is a human-centric approach that assumes human beings are fallible but shouldn't be penalized with death or serious injury. However, this requires a fundamental rethink of the governance and implementation of road safety policy. A Safe System is a holistic and proactive approach to road safety, managed so the elements of the road system combine and interact to guide users to act safely and to prevent crashes, and when crashes occur, to ensure that impact forces do not exceed the

limits that result in serious injury or death. If one part of the system fails, the other components act to prevent serious harm (ITF 2016). If a crash occurs and road users are acting in accordance with road rules, then it is the combination of infrastructure safety features, travel speed, vehicle safety and protective features and post-crash care, which determine whether those road users live or die. Human error is inevitable, but traffic fatalities and serious injuries are not.

Applying the Safe System Approach in Vanuatu will help to ensure that the commitment to reduce (and work towards zero) road crash deaths and serious injuries can be achieved. In addition to the recommendations laid out in this assessment, the adoption of the Safe System Approach by GoV will ensure that Vanuatu has a framework to base their future courses of action for how they will work together to save lives, reduce serious injuries and deliver safety as the standard for all to live by on Vanuatu roads.

ACTIVITIES AND SCHEDULE

The RSMCA commenced on February 15, 2021 with a series of virtual briefings and meetings with senior representatives of key governmental agencies and other relevant stakeholders during the period February 15, 2021 to March 8, 2021 (a total of 17 meetings). Travel restrictions associated with the planned in-country meetings and a complete list of individuals met is available as appendix C. The information gained from these meetings formed the basis of discussion in this report.

The ministries and organizations consulted in the virtual mission were:

- Asian Development Bank (ADB);
- Australian Department of Foreign Affairs and Trade (DFAT);
- Customs and Inland Revenue Department (CIR);
- Japan International Cooperation Agency (JICA);
- Ministry of Education and Training (MoET);
- Ministry of Health (MoH);
- Ministry of Justice and Community Services (MJCS);
- Ministry of Lands and Natural Resources (MLNR);
- Port Vila Municipality;
- Public Land Transport Authority (PLTA);
- Public Service Commission (PSC);
- Public Works Department (PWD);
- State Law Office (SLO);
- Roads for Development Program (R4D) team;
- Vanuatu Chamber of Commerce and Industry (VCCI); and
- Vanuatu Police Force (VPF).

A complete list of activities associated with the assessment is included below. The consultations were undertaken in February and March 2021, and this report forms Tasks 1 and 2.1 below.

Task 1. Road Safety Management Capacity Assessment to include the following:

- 1.1 One on one interviews with road safety stakeholders
- 1.2 Review of the existing national structure for road safety management
- 1.3 Appraise the road safety management capacity at the intervention level by applying the Checklists of the GRSF Road Safety Guidelines
- 1.4 Provide recommendations to improve the required road safety management capacity to improve the current situation and reach national goals (as agreed in this process).

Task 2. Consultations on the findings and dissemination, which will include the following:

- 2.1 Preparation of a draft report on the road safety institutional capacity review, summarizing findings and recommendations resulting from Task 1
- 2.2 Workshop to discuss the draft report with relevant GoV officials to seek feedback on the conclusions
- 2.3 Finalization and dissemination of the report on the RSMCA.

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1. CONTEXT AND OVERVIEW

This section provides an overview of the current scale of the road safety challenges in Vanuatu. Appendix D includes additional general information and data on road safety in Vanuatu, sourced through the World Bank and World Health Organization (WHO).

1.1 COUNTRY CONTEXT

Vanuatu is an archipelagic nation of 83 main islands with a total land area of 12,281 km² consisting of six provinces: Torba, Sanma, Penama, Malampa, Shefa and Tafea (Figure 3). The capital city of Port Vila is located in Efate Island in the Shefa province. The largest island, Espiritu Santo with the city of Luganville is in the Sanma province (VNSO 2011).

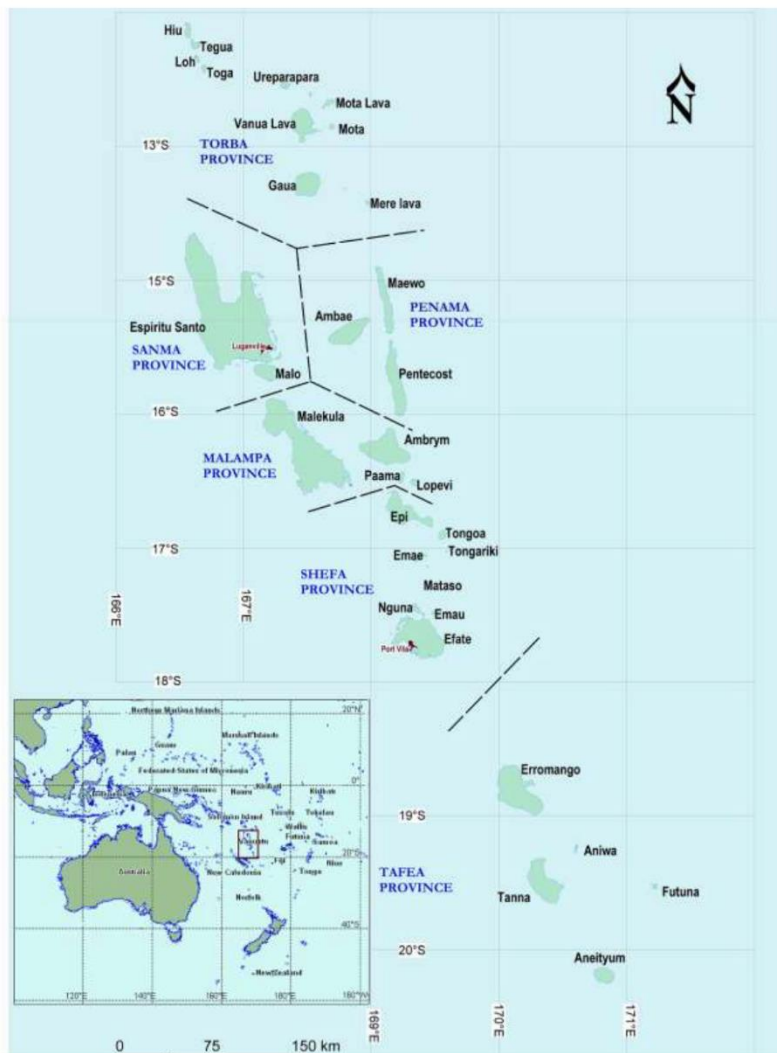


Figure 3: Map of Vanuatu (VNSO 2013)

Vanuatu’s economic growth has mainly been driven by the agricultural and services sector comprising 19 percent and 69 percent of overall Gross Domestic Product (GDP) in 2018 respectively (VNSO 2018). The services sector includes “public administration, retail trade, finance and insurance, transport, real estate, and accommodation and food services” (GoV 2015). While GDP had been growing at an average rate of 2.3 percent since 2011, the economy was negatively impacted by downturns in tourism, delays in infrastructure projects, and natural disasters (Figure 4) (Global Green Growth Institute 2017). The economy is estimated to contract by 1 percent in 2020 due to the global pandemic and Tropical Cyclone (TC) Harold, although this is expected to rebound by 2021. However, it is important to note that growth episodes can be due to rebuilding and reconstruction efforts which imply that growth is a return to the initial economic situation (World Bank 2016).

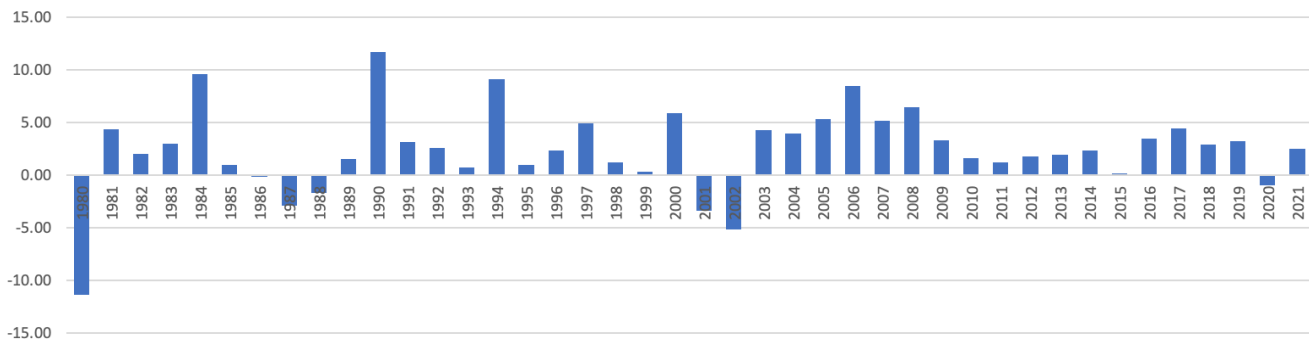


Figure 4: Historical and Projected Annual Gross Domestic Product Growth (ADB 2020)

The national population is increasing at an average rate of 2.6 percent per year since 2010, and consequently population growth is also a driver of Vanuatu’s economy (Figure 5) (World Bank 2020a). Each year, more people become exposed to issues in the road and transport system and thus there is an increasing need for safer roads and safer transport. The national population is projected to grow rapidly to reach 383,000 by 2030 (UN 2019). In 2016, more than half of the population was living in Shefa and Sanma provinces (Figure 6) (VNSO 2016).

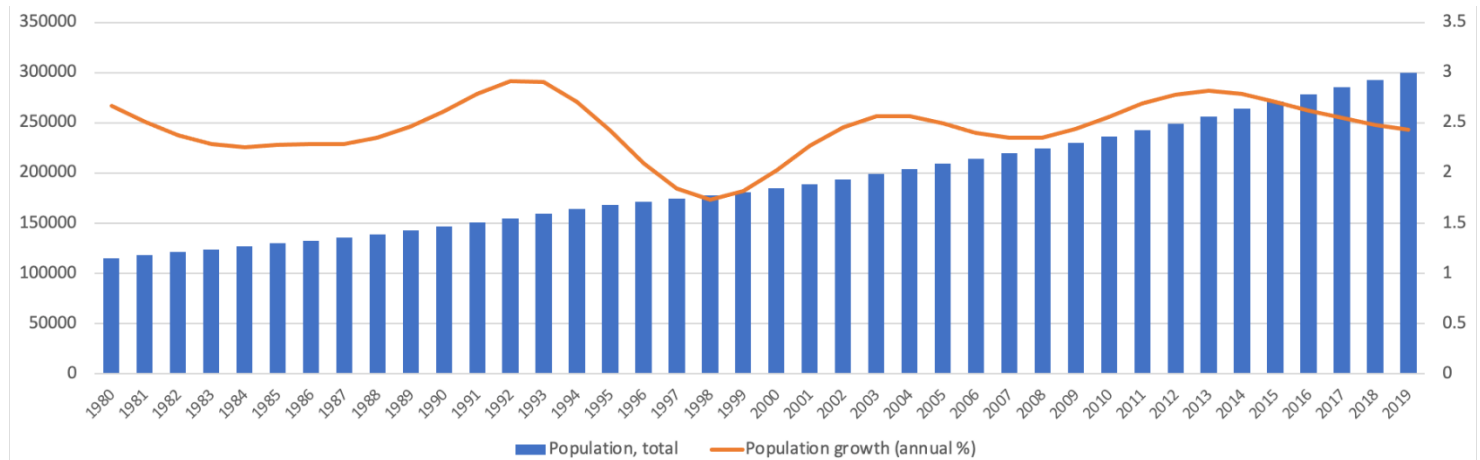


Figure 5: Total Population and Annual Population Growth (World Bank 2020a)

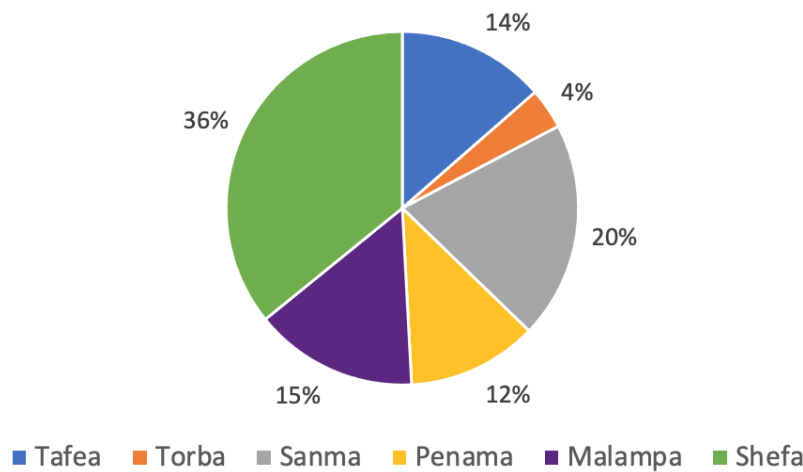


Figure 6: Population Percentage per Province (VNSO 2016)

It is important to note that the majority of the population live in the rural parts of Vanuatu, and currently only 25 percent reside in urban areas (World Bank 2020a). Because of the lack of access to employment and social services such as health, education, and government facilities, rural to urban migration is apparent and in recent years relocating to the city has become more permanent. This is reflected by the faster population growth rate in Efate Island where Port Vila is located, compared to the rest of the country. From 2009 to 2016, Efate Island grew at a rate of 3.2 percent compared to the national population growth rate of 2.2 percent (World Bank 2021). Interestingly, as people move to the city, they also bring with them the social structures and customs from their villages, such as the emergence of a taon jif (town chief) in urban communities. As with the role they perform in rural areas, the taon jif act as community spokesperson, mediator, and authority (Rousseau, 2017).

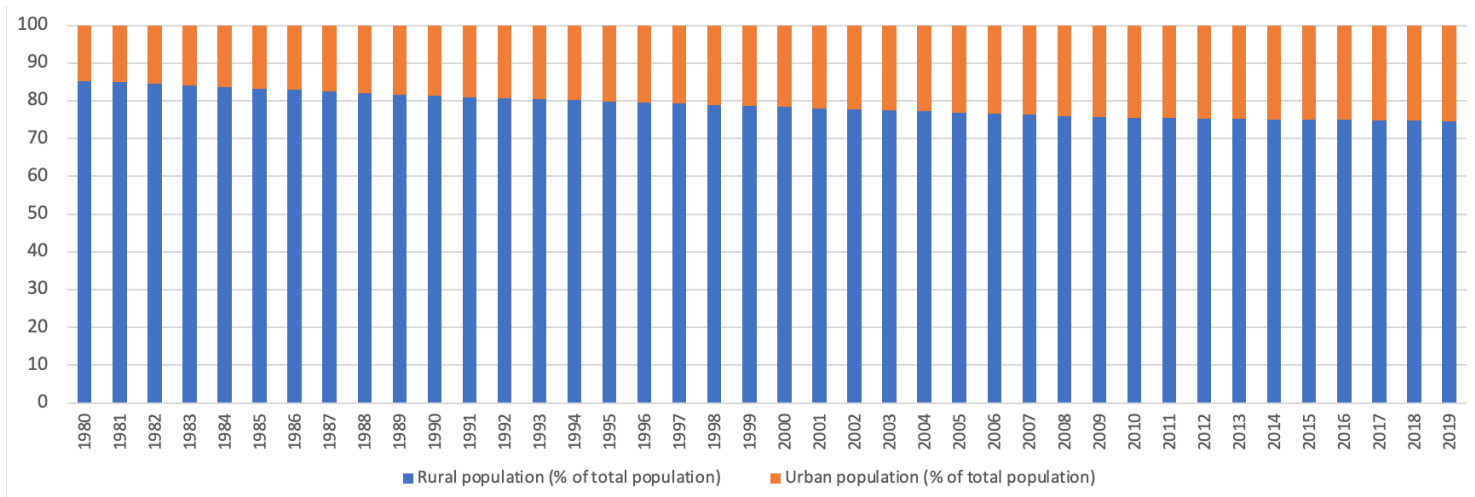


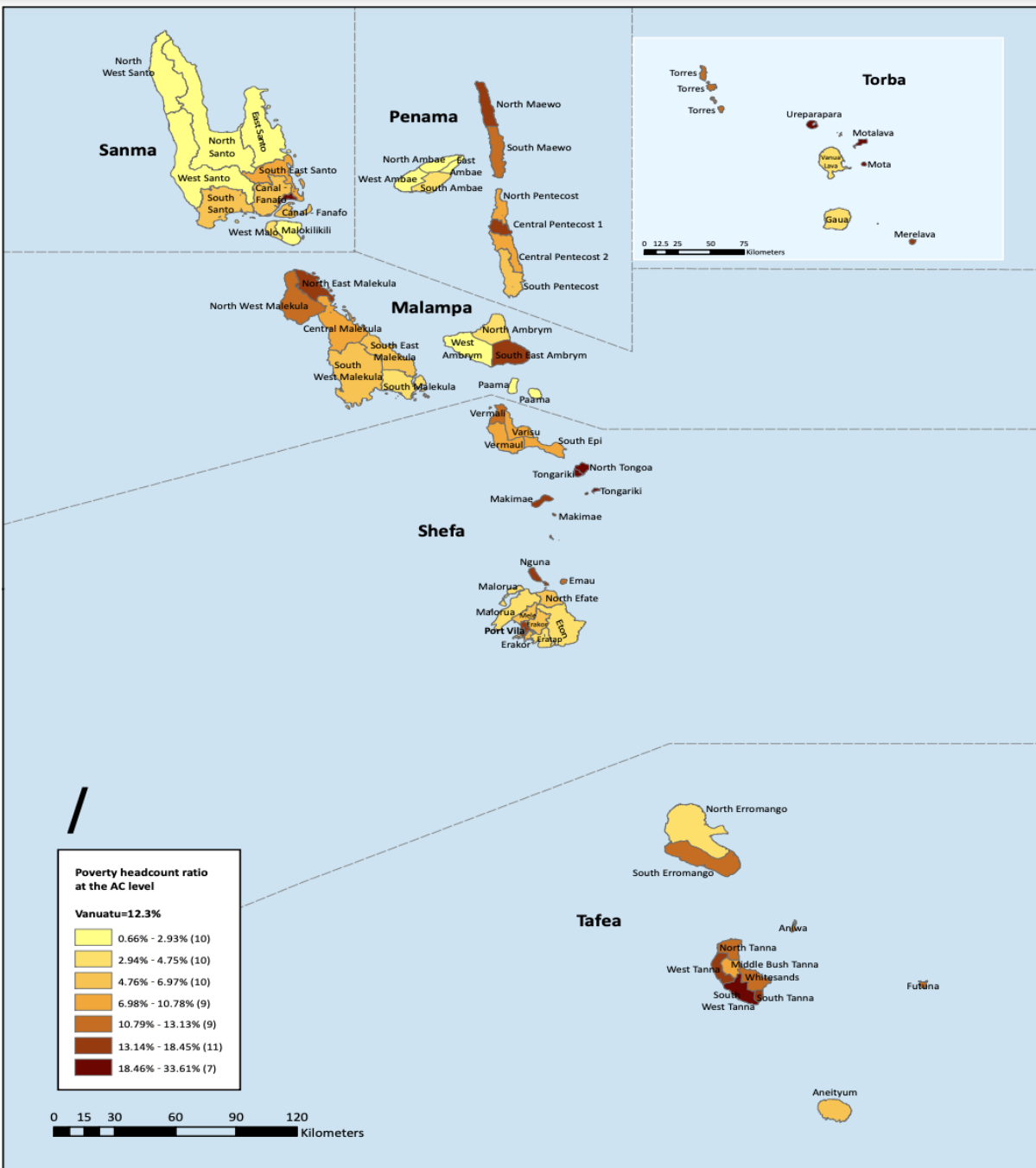
Figure 7: Urban and Rural Population in Vanuatu (World Bank 2020a)

There are stark differences between the urban and rural population, which heavily influence their transport mode choice, travel patterns and the risks that they face in the road network. There is a greater proportion of people in the 15-29 age

groups in urban areas, compared to the rural areas (VNSO 2016). In Port Vila, the average population age is 23 years (United Nations Office for Disaster Risk Reduction and UN-Habitat 2020). These age groups are those who often go to the city to achieve higher education or look for employment and will have unique mobility choices and patterns such as high reliance on public transport. On the other hand, it is also apparent that the youngest and oldest age groups, who also have their own transport and safety needs, are greater in proportion in rural areas compared to urban areas. In both urban and rural areas, the number of males and females are approximately equal (VNSO 2016).

Sources of income for urban and rural households also differ widely. In urban areas, most households earn income by being employed either by the private sector or the government whereas in rural areas, income mostly comes from agriculture, fishing, and handicrafts. It is also important to note that there is also a large percentage of the rural population who get their income from remittances, which imply that they may have family members whom they depend on and are working in the city or in other countries. In both rural and urban settings, safety is integral to the well-being of a community as the fatality or injury of a breadwinner of the family can push a large, extended family further into poverty. This is particularly crucial to Vanuatu where 12.7 percent of the population is living in poverty as measured by the basic needs poverty line (VNSO 2010).

Figure 8 shows a map of poverty incidence and illustrates how poverty is also apparent in the city centers, specifically Port Vila and Luganville, with 18.4 percent and 23.6 percent poverty incidence respectively.



Note: The () in the legend shows the number of area councils (AC) that fall into that category. The median values for each category are 1.5%, 4.3%, 5.8%, 10.2%, 12.0%, 16.0% and 24.9% respectively. For each province, the poverty headcount rate is: Torba (17.8%); Sanma (7.2%); Penama (7.6%); Malampa (9.5%); Shefa (13.0%); Tafea (10.3%); Port Vila (18.4%); and Luganville (23.6%).
 Source: World Bank 2014e

Figure 8: Poverty incidence across Vanuatu (World Bank 2014)

In addition to the local population, Vanuatu also has a significant transient population in the form of tourists. Tourism has been growing in the country and is envisioned to further expand after the global pandemic (Figure 9). The tourist population represents a group who commonly use taxis and tourist buses and they also have their own experience of safety risks.

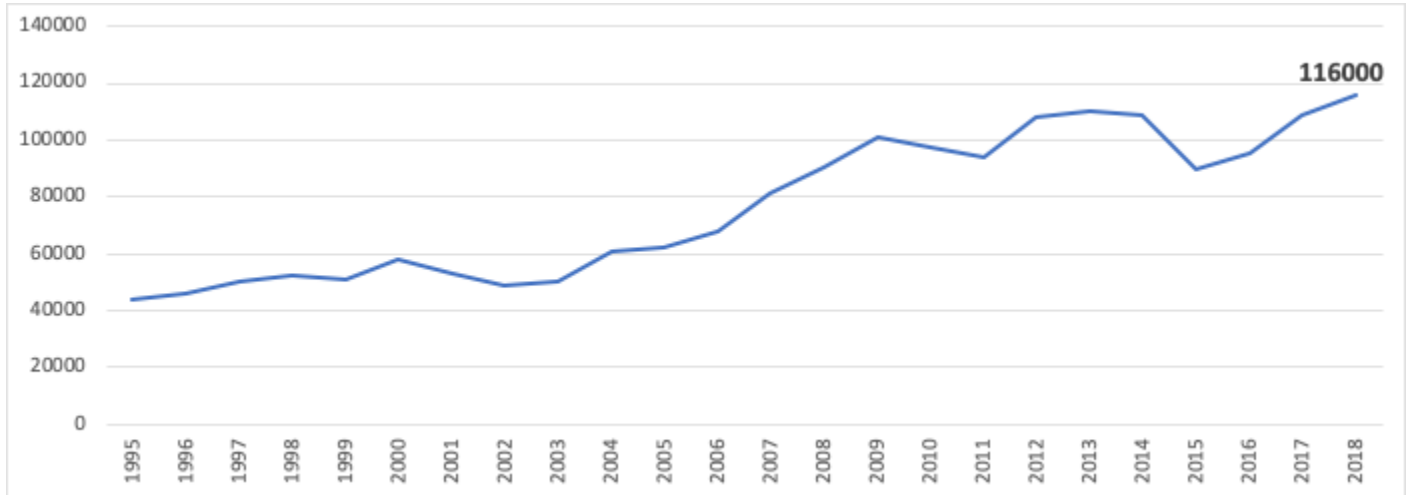


Figure 9: Number of Tourists in Vanuatu (World Bank 2020a)

Finally, a crucial factor that governs daily life in Vanuatu is the frequency of natural disasters. Vanuatu is highly impacted by typhoons and earthquakes and is identified as the most at-risk country globally for these natural disasters (Behlert and others 2020). In this case, risk pertains to a combination of factors such as exposure and susceptibility to natural disasters, coping mechanisms, and adaptive capacities. In 2020 alone, amidst a global pandemic, the extremely destructive TC Harold tore through Vanuatu destroying infrastructure and taking lives (GoV 2020). In 2015, destruction and damages caused by TC Pam amounted to losses equivalent to 64.1 percent of Vanuatu’s GDP.

1.2 ROADS, TRANSPORT, AND MOBILITY

The National Sustainable Development Plan of 2016-2030 aims to ensure the provision of safe and accessible road and transport infrastructure to all citizens of Vanuatu. The Plan recognizes that improved road and transport infrastructure is integral to sustained and inclusive economic growth and this is also emphasized by individual ministerial plans and strategies. As Vanuatu is an archipelago, people depend on multiple modes of transport for movement. There is a strong demand for travel for employment, social services, schools, health facilities, and business and accessibility and connectivity are limited because of the lack of safe and functional roads.

As of 2021, it is estimated that Vanuatu has a road network of approximately 2,609 km of rural roads, 171 km of urban roads in Port Vila, and 131 km of urban roads in Luganville. Table 1 summarizes the quality of the rural road network in each of the provinces, of which only eight percent are sealed and around one percent are concrete.

Table 1: Estimated road lengths by surfacing type and province (PWD 2018)

Province	Sealed	Gravel	Earth	Concrete	Total
Malampa	0.00	268.30	237.42	3.99	509.70
Penama	0.00	232.34	210.60	9.89	452.83
Sanma	73.35	536.76	89.91	3.40	703.42
Shefa	115.80	118.72	166.99	5.42	406.93
Tafea	19.92	112.25	338.70	8.97	479.84
Torba	0.00	15.68	36.79	3.82	56.29
Total	209.07	1,284.05	1,080.41	35.49	2,609.01

Almost half of the rural road network is located in the Sanma and Shefa provinces, which are Vanuatu’s two largest provinces by land surface area and are where more than half of the population is residing. In Port Vila, major surface roads are deteriorating and have many potholes due to lack of maintenance and frequent rains as well as a lack of safe pedestrian infrastructure and safe access for persons-with-disabilities (United Nations Office for Disaster Risk Reduction and UN-Habitat 2020).

Photograph 1 shows a portion of the Ring Road in Efate Island while photographs 2 and 3 are wooden and concrete bridges in Malekula. Photographs 4 and 5 show rural roads in Vanuatu while photograph 6 shows a road under rehabilitation. Photograph 7 shows a common mode of transport in Vanuatu and photograph 8 shows a section of Santo Road.



Photograph 1: Along the Ring Road in Efate Island (Mapillary 2018)



Photographs 2 and 3: Wooden and Concrete Bridges in Malekula (PWD 2017)



Photographs 4 and 5: Rural Roads (Mapillary 2018)



Photograph 6: Road under Rehabilitation (Mapillary 2018)



Photograph 7: Common Mode of Transport in Vanuatu (Coghlan 2015)



Photograph 8: Section of Santo Road (World Bank 2019)

In 2016 and 2017, new vehicle registrations increased by 24 percent and 27 percent respectively and the increase was mainly in new cars and buses. However, starting in 2018 vehicle registrations have been reducing mainly because of a ceiling imposed by the Public Land Transport Authority (PLTA) on the number of commercial buses that can operate on the road. These buses include mini-buses and tourist buses, which are used for public transport. While the overall motorization rate is decreasing, new car registrations are still increasing. Furthermore, the Public Works Department (PWD) notes that many vehicles are unregistered, and thus the motorization rate is likely greater than records suggest. The Customs and Inland Revenue Department estimates that as of 2020, the vehicle fleet based on annual vehicle inspection stickers is around 9,000 vehicles and the total driver's licenses that have been issued equal 17,985 licenses (Figure 10). Currently, the number of vehicles owned and used per household is unknown.

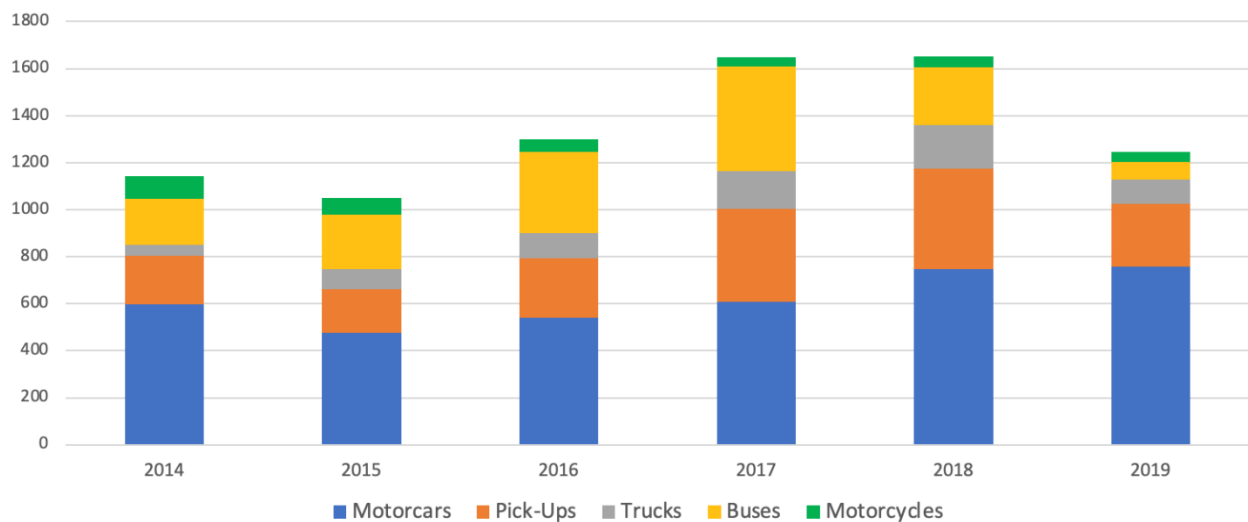


Figure 10: Vehicle registration data from 2014-2019 (VNSO 2020)

In 2016, the PWD with support from the Japan International Cooperation Agency (JICA) conducted a traffic survey of vehicles passing through the Ring Road on Efate. Results from this analysis show that 65 percent of vehicles which pass through the Ring Road are small commercial vehicles such as pick-up trucks and minibuses (Figure 11). These vehicles are the primary mode of transport on Efate.

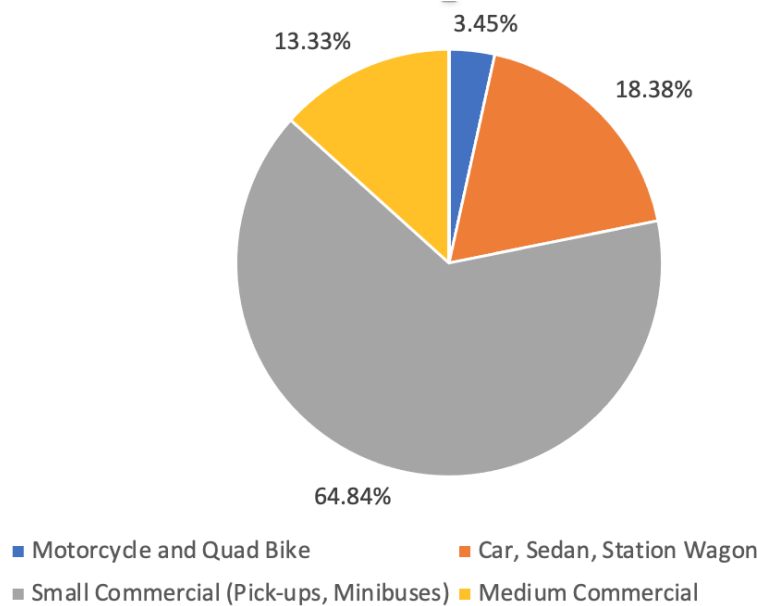


Figure 11: Traffic Counts in Ring Road in Efate Island (JICA 2016)

In the same study, JICA also conducted a vehicle and pedestrian count in three locations surrounding the Teouma Bridge, which is also located along the Ring Road on Efate Island. In the three locations there is a significant proportion of pedestrians that mix with heavier vehicles such as trucks and minibuses. It has been observed that pedestrians during the weekday are mostly males who are walking to crop fields or social gatherings around the village. The volume of pedestrians increases significantly during weekends and most of them are walking towards the church (JICA 2016). While this traffic count is only limited to Teouma Bridge, this provides a snapshot as to existing travel modes and patterns especially along rural roads and shows how pedestrians are exposed to safety risks.

Ongoing improvement and rehabilitation of the road network will lead to increases in motorization and will warrant a closer consideration of road safety as these will consequently increase the risk of crashes, unless traffic calming or other measures are put in place as part of these projects.

There are government and donor-funded road and transport programs and projects that the government, through the PWD, is implementing in the country. For example, the World Bank is currently providing assistance to the road sector through the US\$66m Vanuatu Climate Resilient Transport Project (VCRTTP), which aims to improve the climate resilience of Vanuatu’s road network and provide assistance during crisis or emergency. The VCRTTP has four main components which includes upgrading the Road Inventory Management System; financing the design, construction and maintenance of the South Santo Road to improve its climate resilience; strengthening the Ministry of Infrastructure and Public Utilities-PWD’s institutional and regulatory functions for road sector asset management; and providing contingency emergency response. As of October 2019, the World Bank’s Environmental and Social Framework calls for road safety to be considered on all World Bank-funded projects (World Bank 2019).

The Asian Development Bank (ADB) will continue to support three priority sectors: energy, transport, and water, and other urban infrastructure and services. Public sector management has also been identified as an important area for ADB involvement, and a budget support program is proposed for reforms that will improve Vanuatu’s economic resilience and

generate inclusive growth. The ADB has just recently supported the Phase One of the Port Vila Urban Development Project and the drafting of the Vanuatu Transport Plan 2030.

The Australian Government's Roads for Development (R4D) initiative are currently supporting the installation of signs and line marking and conducting road safety audits. They are willing to support a larger activity in road safety in the future. JICA is supporting the rehabilitation of the Teouma Bridge in Efate Island.

RATE OF FATALITIES AND SERIOUS INJURIES

For 2016, official crash records show that nine road crash fatalities had occurred in the country (WHO 2018). According to the Vanuatu Police Force (VPF), the main causes of crashes are speeding and drink-driving. Officially reported crash fatalities have remained at the same level for the past three years (Figure 12).

This is in stark contrast with the WHO estimated number of fatalities in Vanuatu for 2016 which is 43 fatalities (WHO 2018). **Error! Reference source not found.**

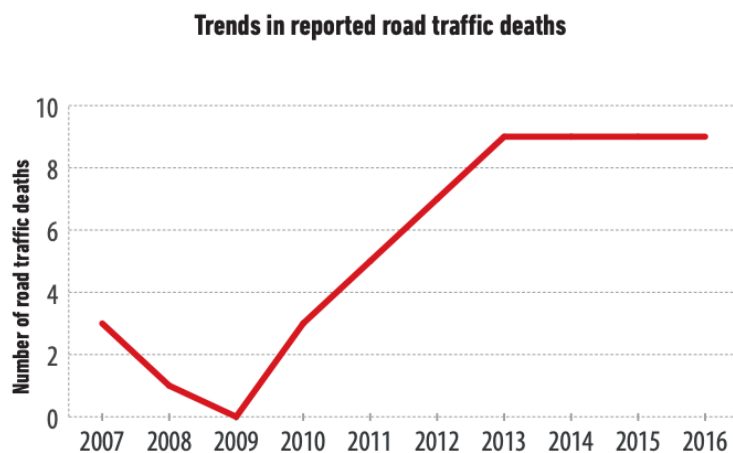


Figure 12: Reported road crash fatalities in Vanuatu (WHO 2018)



Figure 13: Fatal crash in Port Vila (Willie 2019)

There are reasons to believe that the official number reported by VPF is substantially underreported—considering the increase in population, rural to urban migration, increased motorization, and that no major road safety program has been implemented in the recent years—all of which are conducive to increasing numbers of road crash fatalities and serious injuries. In addition, the ministries have expressed the need for more reliable and centralized data. When compared to other countries, the estimated number of fatalities in Vanuatu is high relative to others in the Asia-Pacific region (Figure 14).

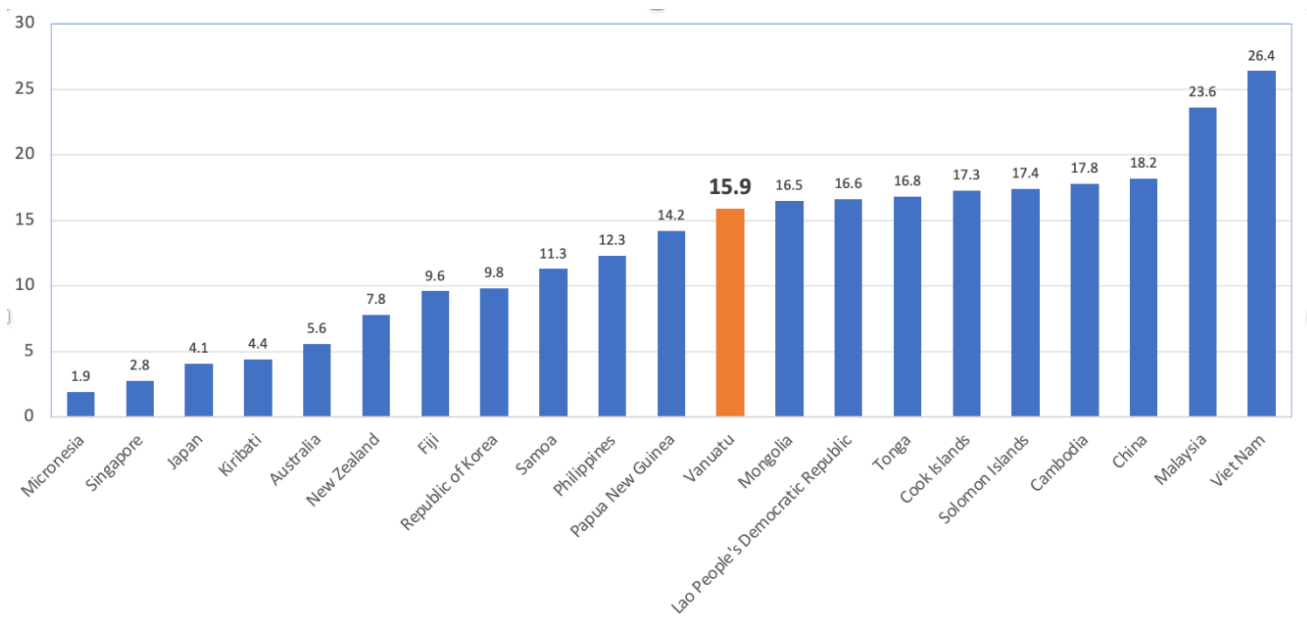


Figure 14: Road Crash Fatalities per 100,000 population in the Asia-Pacific Region (WHO 2018)

Moreover, the Global Burden of Disease (GBD) study estimated 51 fatalities in 2016 (World Bank 2020). The GBD also ranks road crash injuries as the ninth leading cause of death in Vanuatu in 2019, falling from the eighth in 2009, while the absolute number of deaths still increased by 20.1 percent (Institute for Health Metrics and Evaluation 2019). These numbers, which are based on either death registry or regression analysis of macroeconomic variables, point to the possibility that the gravity of the road safety issue is greater than what is officially reported.

For serious injuries, World Bank estimates that in 2016, a total of 645 serious injuries occurred in the country (World Bank 2020b). An extract of the source report for this information is included in appendix D. The lack of official injury data as well as the significant discrepancy between the official records and the estimates warrant a closer inspection of crash data. This is discussed further in the following section.

While it is difficult to count the true number of fatalities and injuries, it is useful to note the distribution of the number of fatalities by road user type (Figure 15). In 2016, at least 50 percent of crash fatalities in Vanuatu were pedestrians. This number is higher than the average share of pedestrian fatalities in the region and in low- and middle-income countries (World Bank 2020b). Second to pedestrians in relation to fatalities by road user type are four wheelers, which is higher than the average in low- and middle- income countries, but lower than the Asia-Pacific region average (World Bank 2020b). Furthermore, according to the PLTA public service vehicles such as minibuses and taxis are reported to have been involved in 113 crashes in 2015 and 143 crashes in 2016 in Efate alone (DFAT 2018) signifying how public service vehicles and their passengers are also particularly vulnerable to crashes.

FATALITIES BY USER COMPARISON CHART

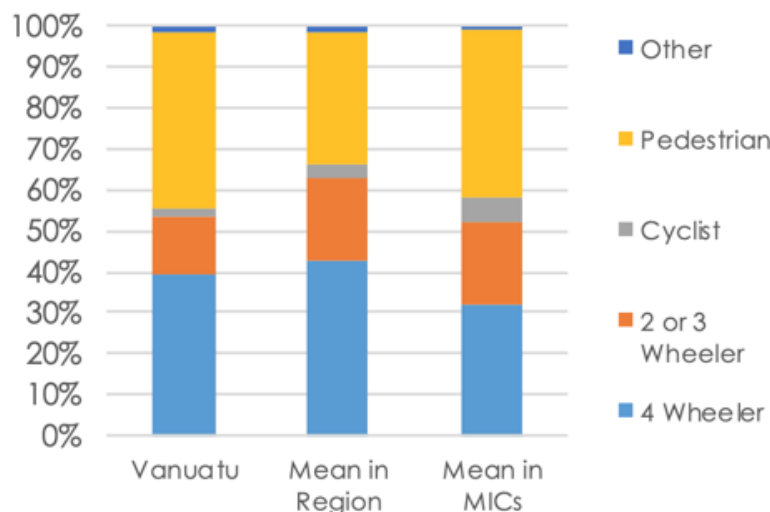


Figure 15: Fatalities by Road User Type in Vanuatu, 2016 (World Bank 2020b)

Disaggregated by age and gender, 77 percent of road crash fatalities and injuries affect people from the 15–64 year old age group and mostly involve men (World Bank 2020b). This is supported by historical death certificate data in Vanuatu where 13 percent of men aged 15–59 years have died due to road crash injuries (Carter et. al 2016).

ECONOMIC COST OF FATALITIES AND SERIOUS INJURIES

Individual estimates of the benefits of fatalities and serious injuries avoided through specific targeted road safety investment (in infrastructure safety treatments, additional legislative and enforcement activity, and so on) are shown in Table 2. This is derived from work carried out by the International Road Assessment Program (iRAP) and the GRSF.

Table 2: Estimated cost of road crashes in Vanuatu using 2019 World Bank Gross Domestic Product/capita and using International Road Assessment Program economic appraisal model values (McMahon and Dahdah 2016)

	Lower		Central		Upper	
	iRAP value	Vanuatu estimate	iRAP value	Vanuatu estimate	iRAP value	Vanuatu estimate
Value of Fatality	60*GDP/Capita	USD 186,922	70*GDP/Capita	USD218,075	80*GDP/Capita	USD249,229
Value of Serious Injury	12*GDP/Capita	USD 37,384	17*GDP/Capita	USD52,961	24*GDP/Capita	USD74,769

This estimates the level of annual economic cost of road crash fatalities and serious injuries to Vanuatu to be at least US\$32.1 million and at most US\$58.9 million, based on the WHO estimate of 43 fatalities and the World Bank estimate of 645 serious injuries, and expressed in 2019 monetary terms based on iRAP data,. The GRSF Road Safety Country Profiles (World Bank 2020) provides an estimated economic cost for 2016 of US\$41.66 million, or 5.3 percent of GDP. This indicates the scale and significance of the road safety problem for the Vanuatu economy, as well as for the society in general.

To summarize, Vanuatu’s growing and changing economy and population warrant long-term, sustainable, and meaningful actions to improve people’s mobility, particularly improving their safety on the roads. Improving road safety brings multiple benefits, including safe access to schools, hospitals, and businesses. It is also important to consider the stark difference in transport needs for rural and urban residents, which will require more context specific approaches in planning for road safety measures.

While the official crash data shows that crash fatalities are not increasing, there is evidence that this is due to issues with data collection. Crashes, and crash severity, are widely underreported, and considering the growing population, motorization and the lack of major road safety programs, it may be possible that there are significant number of crashes that were not reported, or the information was not appropriately recorded or harmonized among the responsible agencies. Improving data is an important step in realizing the gravity of the road safety problem and will involve coordination among ministries. Road crash data issues will be discussed further later in the report.

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2. KEY FINDINGS OF THE REVIEW - INSTITUTIONAL MANAGEMENT FUNCTIONS

As defined in the World Bank Global Road Safety Facility (GRSF) Capacity Review Guidelines, there are seven road safety institutional management functions:

- Results focus
- Coordination
- Legislation
- Funding and resource allocation
- Promotion
- Monitoring and evaluation
- Research and development, and knowledge transfer.

These functions are the foundation on which the road safety management system is built and are essential for the production and implementation of interventions which, in turn, will achieve road safety results and over time deliver a Safe System. The following sections explain how the functions are currently practiced in Vanuatu and provide recommendations for how they could each be strengthened.

2.1 RESULTS FOCUS AND COORDINATION

A results focus is the fundamental management function within a government that establishes a strong aspiration for, and delivery of, road safety improvement. It involves the establishment of a strategic direction for road safety, the identification of a lead agency, the adoption of a vision, strategy and associated targets, and ensures stakeholder accountability for results. In the absence of a results focus, all other institutional management functions and related interventions lack direction and overall road safety outcomes are severely impacted. Crash data and other intermediate data are crucial to understand the current situation and risk and to develop priority and meaningful interventions.

Road safety management involves several government ministries who must share responsibility for the road safety outcomes of Vanuatu. Effective horizontal coordination across national government ministries, as well as vertical coordination from national government to provincial and district governments, including village communities, supports the system-wide effort necessary for achieving effective road safety outcomes. It is also important that effective partnership coordination exists between government, key private sector associations and the community.

GRSF capacity checklists one, six and 12 (see appendix A) were used to inform the below analysis.

2.1.1 REVIEW OF EXISTING PRACTICES

LEAD AGENCY AND GOVERNANCE

A coordinating or lead agency for road safety is yet to be identified in Vanuatu. Further, there is not yet an agreed path to determining the party to take on this responsibility. As a result of this, there is currently no coordination of the road safety effort or support for governance and decision-making. Government agencies are taking some minor, isolated actions for road safety, as described in the following sub-section, however this is currently occurring on an ad-hoc basis and not in an integrated manner.

There is currently limited road safety data collection (described further in section 2.5 of this report) and no data sharing arrangements between government ministries. The inaccessibility of road safety data, and lack of usage and analysis by key government ministries is a critical issue and relates to the current absence of road safety results focus and coordination in Vanuatu. Road safety data is essential to identify and determine the nature of issues and formulate corresponding strategies and actions. In the absence of data collection and data sharing amongst relevant ministries, the overall understanding of crash risks across Vanuatu is limited. This prevents implementation of committed and coordinated efforts from government ministries.

ROLES AND RESPONSIBILITIES

The key ministries and organizations involved in road safety in Vanuatu are:

- **Public Works Department (PWD):** PWD is a sub-sector within the Ministry of Infrastructure and Public Utilities (MIPU). A corporate goal of MIPU is: "infrastructure networks and operations that serve people safely, securely and efficiently" (GoV 2020a). PWD is the key ministry responsible for the planning and implementation of routine and periodic maintenance of the road infrastructure, the delivery of most new (and upgraded) road assets, vehicle roadworthy testing and safety aspects of engineering design. Currently PWD has around 160 positions, although many of these were not currently filled at the time of publication of this report. The majority of the PWD workforce is in the six provincial PWD offices (Shefa, Sanma, Tafea, Malampa, Penama and Torba). These offices report to the PWD Headquarters in Port Vila. There are three main branches of the PWD structure:
 - Procurement and contract management
 - Capital works
 - Operations (maintenance).

It is understood that at present there is no dedicated unit or staff positions within PWD specific to road safety, despite 'road improvements to increase safety' being one of four priority areas outlined in the Vanuatu Public Roads Policy (GoV 2019). However, there is ongoing general capacity-building within PWD through the Australian Government Department of Foreign Affairs and Trade (DFAT) Roads for Development (R4D) project and other discrete activities funded by the World Bank, Asian Development Bank (ADB) and Japan International Cooperation Agency (JICA).

PWD is mandated primarily by the Public Roads Act (2014), which provides for the "designation, planning, administration, construction, and maintenance of public roads" (GoV 2014). The Public Roads Act (2014) enables the Director General (DG) of MIPU to appoint either PWD, a Local Government Council, or Municipal Council as the Roads Administrator for sections of roads. Otherwise, the DG is the Roads Administrator for the purposes of the legalization. According to the Vanuatu Transport Plan 2030 (ADB 2018), clarity is needed in terms of the

inventory of the road network in order to establish the roles and responsibilities for maintaining and managing the road network.

PWD is also mandated by the Road Traffic Control Act (GoV 2006), which covers the control and registration of vehicles.

- **Vanuatu Police Force (VPF):** VPF is the national policing body of Vanuatu and is responsible for enforcing the law. The vision of VPF, as outlined in the Vanuatu Police Force Strategic Plan 2016 to 2020 is “a modern and professional Police Force united in delivering an effective policing service, in partnership with our communities for a safe and secure Vanuatu” (VPF 2016). Further, a goal within the VPF Strategic Plan is to “improve safety for road and water users, and first responders through targeted operations and investigations; and enhance response to and investigation of offenses by strengthening support to the judicial process” (VPF 2016). The VPF Traffic Unit is responsible for traffic enforcement throughout Vanuatu. Currently, their primary road safety responsibilities include:
 - The endorsement of driver licenses (for instance, driver testing)
 - Enforcement of legislation including speed limits, reckless driving and driving under the influence of alcohol/drugs
 - Providing ad-hoc road safety information at schools and on the radio
 - Investigating crash scenes and collecting crash data.

Four islands in Vanuatu (Tanna, Santo, Malakula and Efate) have traffic police presence. In total, there are currently approximately 30 traffic police throughout Vanuatu. There is a strategy being developed by VPF to expand its staff numbers to approximately 75 personnel across Vanuatu, including providing traffic police on other islands. In Port Vila, the traffic system includes both VPF, as well as municipal wardens. The municipal wardens don't have separate powers under the Road Traffic Control Act (2006), rather they operate under the delegated powers of VPF and assist them with their duties.

VPF is mandated by the Police Act (1980) (GoV 1980) and the Road Traffic Control Act (2006). Both of these Acts provide only minimal support for VPF to properly carry out its road safety enforcement role. The Police Act (1980) charges VPF with the responsibility to regulate and control traffic, however there are no specific requirements related to road safety. The Road Traffic Control Act (2006) does not legislate for the use of speed radars, breathalyzers or other deterrence equipment, and includes only moderate penalties for perverse driver behavior. This absence of key supporting legislation, combined with the limited resourcing, both in terms of staffing and equipment, are critical inhibitors to VPF's deterrence activities. This is discussed further in subsequent sections of this report.

The Public Land Transport Act (2015) (GoV 2015) mandates police officers or municipal wardens to impound a public transport vehicle under certain circumstances.

- **Ministry of Health (MoH):** MoH is tasked with providing the health care system in Vanuatu. MoH is divided into three main divisions:
 - Policy, planning and corporate services
 - Public health
 - Hospitals and curative services.

The levels of care available within the health system range from the main hospitals on Santo and Efate, to aid posts. Vila Central Hospital is the main referral hospital in Vanuatu. Lenakel Hospital is situated on the western part of Tanna and is the provincial referral hospital for Tafea Province. It focuses mainly on curative services and distribution of medical services throughout the province and is currently improving crash and emergency services. Northern Provincial Hospital is the designated referral hospital for Luganville municipality and Sanma Province.

Lolowai Hospital and Norsup Hospital also provide health services to Ambae and Malekula. Staffing shortages are seen as the major factor limiting the fair distribution of health services. Many public health facilities are understaffed, particularly in rural areas, and some are not staffed at all.

Government operated ambulance services are operated from the main hospitals on Efate and Santo only. Emergency medical transportation is provided unofficially by public transport drivers in rural areas.

- **Customs and Inland Revenue Department (CIR):** CIR is the government ministry tasked with protecting the community from potential risks arising from international trade and travel, while facilitating the legitimate movement of people and goods across the border. CIR powers are set out in various Acts of Parliament, including the Road Traffic Control Act (2006).

CIR issue driver licenses and vehicle registration following the endorsement of a person's driving ability from VPF (through driver testing) and vehicle roadworthiness checks by PWD, respectively. Through these activities, CIR is responsible for keeping a record of all licensed drivers and vehicle registrations.

CIR has over 90 employees spread across Vanuatu. There are offices in both Port Vila and Luganville and in all provincial centers in Lenakel, Lakatoro, Saratamata and Sola. The CIR structure comprises of the Director and the two Deputy Directors, one of which is the Deputy Director Revenue and the other the Deputy Director of Enforcement and Services.

- **Public Land Transport Authority (PLTA):** PLTA was established by the Public Land Transport Act No. 4 (2015) to control the operation and management of public land transport in Vanuatu. PLTA is within the Ministry of Internal Affairs and consists of the following members:
 - Director of the Department of Local Authorities (Chairperson)
 - Director of the Department of Tourism
 - Head of the Traffic Section of the Vanuatu Police Force
 - Representative of the Minister of Internal Affairs
 - Chairperson of each Public Land Transport Association.

Under the Public Land Transport Act, the PLTA has the following functions:

- Oversee the carrying on of the business of providing public land transport services within Vanuatu
- Ensure that owners and drivers of public land transport vehicles comply with the provisions of the Land Transport Act
- Organize trainings for owners or drivers of public land transport vehicles
- Set or prescribe standards that have to be met by owners or drivers of public land transport and vehicles
- Prescribe the system of fare levying to be used and the fare structure to be charged by public land transport operators in municipalities or provinces
- Advise the Minister on public land transport matters generally
- Register all Provincial Public Land Transport Associations
- Determine general and tourist pick-up areas and who is permitted to use each of these areas.

An owner and driver of a public land transport must be registered as a member of the Association in which the public land transport operates. An Association may determine terms and conditions for membership and fees to be paid before a person may become a member of that Association. Any person who intends to drive land transport or tourist land transport must apply for a driver's permit from a Permit Officer for every Association under the PLTA. Similarly, a vehicle permit must be obtained from a Permit Officer for the region in which the vehicle is to be driven.

In addition to this, an Association has the following functions:

- Oversee the carrying out of the business of providing public land transport services within its jurisdiction
- Ensure that owners and drivers of public land transport within its jurisdiction comply with the provisions of this Act
- Bring to the attention of the Authority any matters which they consider significant for the better carrying out of the business of public land transport service within the relevant jurisdiction
- Provide the Authority with any information which the Authority may request from the Association
- Perform such other functions as may be conferred on an Association by the Authority, or under the Land Transport Authority Act or any other Act.

The PLTA currently has six staff, three in Port Vila and three in the outer islands.

- **Ministry of Justice and Community Services (MJCS):** MJCS is responsible for, or provides support to, a number of agencies within the justice system
 - The courts (Supreme, Magistrates, Island Courts)
 - The tribunals
 - The correctional centres
 - Child rights, family protection, disability advocacy and services, empowerment of women, and public prosecution and defence services
 - Legal advice to government.

MJCS also provides support to agencies that review law, make new laws and implement relevant United Nations Conventions, including those that relate to the matters described above as well as safeguarding human rights. MJCS provides support for legislative drafting and law reform through the Vanuatu Law Reform Commission (VLRC). The VLRC is mandated by the Law Reform Commission Act (2016) to review, recommend and reform the laws of Vanuatu as amended from time to time. The VLRC functions to study and keep under review all laws and to recommend reforms particularly in respect to:

- The removal of anachronisms and anomalies
 - The reflection in the law of the distinctive concepts of custom, the common and civil legal systems and the reconciliation where appropriate of differences in those concepts
 - The development of new approaches to and new concepts of the law in keeping with and responsive to the changing needs of society, of groups within that society and of individual members of that society
 - The creation of new laws.
- **State Law Office (SLO):** The SLO was established by the State Law Office Act (2006) and is placed within the MJCS. The positions of Attorney General (AG), Solicitor General and Parliamentary Counsel are provided for in the State Law Office Act (2006). The SLO acts independently, and the AG is Head of the SLO. The principal functions of the SLO are to provide advice to, and represent the Government on, legal matters that may be referred to it by the President, the Council of Ministers (CoM), the Prime Minister, a Minister, a Director General of a ministry, or Director of a department. The SLO also provides the specialist services to the Government on legislative drafting services, preparation of government instruments and the publication of Official Gazettes.
 - **Ministry of Education and Training (MoET):** MoET is responsible for education in Vanuatu. MoET's mission is to provide a caring education system which provides every young person with the lifelong skills, values and confidence to be self-reliant. There are some basic road safety measures included as part of the current school curriculum.

Available organizational structures of the above listed ministries and organizations can be found in appendix E.

NATIONAL ROAD SAFETY VISION

Currently, there is no nationally adopted strategic vision, action plan, strategy, or targets for road safety in Vanuatu. However, the Government of Vanuatu (GoV) do have in place some strategic planning documents developed by individual ministries with elements of road safety within each, as noted below:

- **Vanuatu 2030 – The People’s Plan (GoV 2016):** Vanuatu 2030 is Vanuatu’s National Sustainable Development Plan for the period 2016 to 2030. It presents the country’s vision and policy framework for achieving a stable, sustainable and prosperous country, and in doing so sets out the national priorities. Several of the sustainable development goals prioritized by GoV and outlined in the document resonate closely with objectives to improve road safety, including:
 - Society Goal 3: A healthy population that enjoys a high quality of physical, mental, spiritual and social well-being;
 - Society Goal 4: An inclusive society which upholds human dignity and where the rights of all Ni-Vanuatu including women, youth, the elderly and vulnerable groups are supported, protected and promoted in our legislation and institutions;
 - Society Goal 6: A dynamic public sector with good governance principles and strong institutions delivering the support and services expected by all citizens of Vanuatu;
 - Economy Goal 2: Sustainable and well-maintained infrastructure and services for all, through inclusive and effective partnerships; and
 - Economy Goal 3: A strong rural economy that creates opportunities, enables the development of rural communities and increasingly contributes to national prosperity.
- **Ministry of Infrastructure and Public Utilities Corporate Plan 2020 - 2022 (GoV 2020):** MIPU’s most recent Corporate Plan is established through a vision to provide a safe and integrated transport infrastructure network for a prosperous country. This is reinforced by a goal within the plan to provide infrastructure networks and operations that serve people safely, securely and efficiently.
- **Vanuatu Police Force Strategic Plan 2016 - 2020 (GoV 2020):** The VPF Strategic Plan sets out the vision, mission and goals for VPF for the period 2016 to 2020. It also includes details on the processes to monitor outcomes. There are several goals within the strategy that align with efforts to improve the enforcement of safe road user behaviors, including:
 - Improve safety for road and water users, and first responders through targeted operations and investigations
 - Ensure best practice in all aspects of modern policing relevant to the context of policing in Vanuatu
 - Reduce crime through proactive policing
 - Enhance response to, and investigation of, offences by strengthening support to the judicial process.
- **Vanuatu Non-Communicable Disease Policy and Strategic Plan 2016-2020 (GoV 2016a):** Developed by MoH, the Vanuatu Non-Communicable Disease Policy and Strategic Plan for the period 2016 to 2020 provides direction for noncommunicable disease (NCD) prevention in Vanuatu. It recognizes the significant strain NCDs place on individuals and families as well as the nation’s health sector, wider economy and development progression. Most relevant to road safety is the strategy to reduce avoidable injuries through effective health messaging and assuring adherence with associated legislation and the associated intermediate outcomes of:
 - Intermediate Outcome 8.1.1: Communities are aware of the dangers associated with driving when under the influence of alcohol; and
 - Intermediate Outcome 8.1.2: Law enforcement and reform protects communities from avoidable road traffic injuries.

These intermediate outcomes are supported by commendable education and legislative reform activities that should be encouraged and pursued, including to:

- Develop and deliver a campaign to increase community awareness of the danger associated with drink driving or being a passenger in a vehicle where the driver has consumed alcohol;
- Compliment the awareness campaign with the development and distribution of information, education and communication materials aimed at increasing community awareness of the dangers and law surrounding driving when under the influence of alcohol;
- Work with both affected and responsible bodies to advocate for greater enforcement of road safety legislation; in particular Part 14 of the Public Health Act (Seat Belts and Safety of Infants in Motor Vehicles) and Section 16 of Road Traffic Act (Driving When Under Influence of Drinks or Drugs); and
- Provide technical assistance to previously identified areas of reform regarding mobile phone use in motor vehicles and amendments to Section 16 of Road Traffic Act to specify a measurable definition of intoxication (blood alcohol level).

2.1.2 RECOMMENDED NEW PRACTICES

It is an essential first step that elements of results focus and coordination are strengthened within GoV in order to properly manage the road safety improvement task. Only then will effective prioritization of interventions and activities be possible to reduce road deaths and serious injuries. Results focus and coordination are crucial for achieving and maintaining a consolidated and whole of government road safety effort and the delivery of progressively successful outcomes.

Key elements of the results focus function and how they could be strengthened are listed below.

GOVERNANCE

Successful road safety performance requires leadership and accountability within a number of agencies and at many levels. Leadership and accountability are essential for promoting good practice road safety approaches, and the implementation of practical interventions for Vanuatu. There is the need to foster effective coordination and shared decision-making between agencies and maintain this into the future. The arrangements described below are proposed for road safety coordination and decision-making activities in Vanuatu.

It is recommended that over time there eventually be four distinct governance entities utilized to coordinate road safety action. However, only two of these four entities will be established in the short- to medium-term. The four entities are:

- Working group
- Executive group (referred to as a National Road Safety Committee (NRSC))
- Advisory group (to be established once the first two groups are functioning, given the challenges involved in setting up new groups)
- Ministerial group (to be established once the first three groups are functioning, in say five years' time, given the challenges involved in setting up a new ministerial group).

As noted above, the governance arrangements proposed can develop organically as required over the first years of operation. These entities need to be supported by a coordination secretariat (not a new separate entity, rather an additional responsibility for a nominated ministry). This function is described below.

The suggested structure of the road safety governance arrangements is shown in Figure 16.

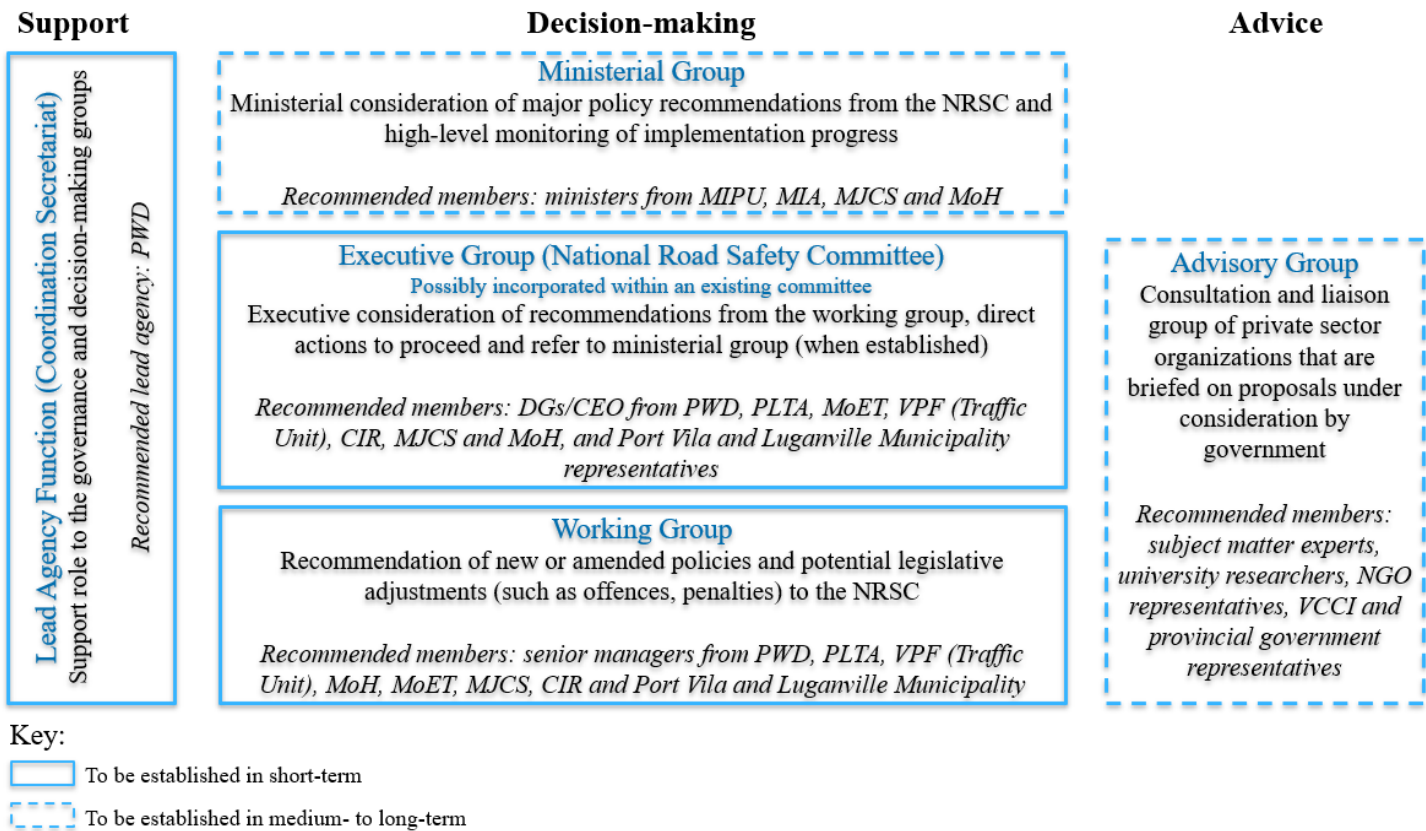


Figure 16: Outline of potential governance arrangements for Vanuatu

Lead agency

Good international practice recommends that a government ministry or equivalent take on the responsibility to support national road safety efforts. This is referred to as the lead agency for road safety. This agency would not do all the work of the individual ministries, but rather it would provide a support role to the governance and decision-making groups. Key aspects of the role include:

- Guide the national road safety effort by convening meetings of the decision-making and consultative groups, preparing agendas, preparing and distributing minutes and as necessary combining and consolidating separate reports on particular policy development issues from various ministries into a consolidated document for the executive group;
- Coordinate development of a national road safety strategy;
- Support joint decision-making among the ministries;
- Coordinate the efforts of all participating sectors of government and other stakeholders;
- Provide specific evidence-based policy development input;
- Ensure effective crash data system operation and data analysis and sharing with relevant government ministries;
- Coordinate calculation of an agreed value of a life for road crash fatalities in Vanuatu; and
- Provide advice for behavioral deterrence programs.

It is recommended that the lead agency secretariat for road safety in Vanuatu be PWD. A terms of reference (TOR) for the lead agency should be developed by GoV, noting that achieving all aspects listed above in addition to their existing

responsibilities will not be possible for PWD immediately. The scale of these responsibilities should be increased as confidence and abilities are strengthened.

As part of the inception of road safety governance arrangements in Vanuatu, the nominated lead agency should support the establishment of both the working group and executive group. For both the working group and the executive group, the lead agency will be the government support group. The lead agency would be strengthened over time to provide specific evidence-based policy development input, crash data analysis and advice for improving behavioral deterrence programs to address higher crash risks, among other inputs. In turn, the effectiveness of the NRSC would be supported through these strengthened secretariat arrangements and through improved policy advice provided to them. By association, the capacities of all ministries which are part of the NRSC would be strengthened.

Working group

Following the nomination of a lead agency, the establishment of a working group is recommended, consisting of senior managers from PWD, PLTA, VPF Traffic Unit, MoH, MoET, MJCS, CIR and Port Vila and Luganville Municipality representatives. This working group would meet monthly and have a decision-making role whereby they would recommend new or amended policies and potential legislative adjustments (such as offences and penalties) to the NRSC every quarter. The working group members would also attend the NRSC meetings to discuss the recommendations under consideration if required, and provide any other immediate advice sought.

Executive group—National Road Safety Committee

An executive group, or NRSC, should be established and meet regularly (quarterly) to support the road safety effort being driven by the working group. It is recommended that the NRSC consist of the following:

- DG of PWD as the Chairperson
- Chief Executive Officer of PLTA
- DG of MoET
- Chief Inspector of VPF Traffic Unit
- Most Senior Officer Representative from Port Vila and Luganville Municipalities
- DG of CIR
- DG of MJCS
- DG of MoH.

There are a number of established committees in Vanuatu within GoV. It is suggested that it be investigated as a first step, whether the NRSC could be a sub-group of one of these existing committees.

The NRSC would be provided with recommendations from the working group and if accepted by the NRSC, would direct the actions to proceed or refer the recommendations to each relevant Minister and Cabinet as appropriate. A ministerial group (in the coming years) may be a more effective mechanism to process NRSC high level recommendations to government. The NRSC may also ask for further work and information on any initial proposals or matters to be reported back to them. The private sector, in the form of membership of an advisory group would have the opportunity to provide input and comment to the NRSC where applicable.

It is essential that the members of the NRSC accept their responsibility to lead and drive the road safety agenda and accept accountability for outcomes.

Ministerial group

Future national efforts to address road safety would also benefit from the formation of a ministerial group comprising ministers from MIPU, Ministry of Internal Affairs (MIA), MJCS and MoH. This would allow for combined ministerial consideration of major policy recommendations from the NRSC and high-level monitoring of implementation progress. Other ministers would be invited to participate as and when issues relevant to their portfolios arise.

This ministerial group could approve certain matters within ministers’ delegations and determine to refer important proposed policy and associated legislative changes to Cabinet.

This pathway to inform senior ministers is a crucial part of the road safety institutional management function. Only once ministers understand the nature of the road safety problem, the merit of evidence-based scientific basis for analysis and development of intervention solutions, and are kept abreast of what is happening, can they be expected to speak up for legislative or regulatory change. This is a change management process that can only be successful with high level support within GoV.

Advisory group

A fifth key component of the road safety leadership and coordination effort is an advisory group, which would be a consultation and liaison group of nongovernmental organizations (NGO) including private sector umbrella organizations including the Vanuatu Chamber of Commerce and Industry, university researchers, subject matter experts and NGO representatives, as well as provincial and village council representatives. They would meet four times per year and be briefed on proposals under consideration by government. Their input would be sought on those or any other matters for which they wished to make suggestions or make comment upon.

It is recognized that there are resourcing constraints in Vanuatu—and a number of government roles are already vacant—however these suggested governance arrangements should be considered as simply a means of more effectively driving outcomes from the already established responsibilities of individual agencies through systemized structure and regular meetings. It is advised that further ongoing support from international partners needs to be given to GoV to progress road safety development

ROLES AND RESPONSIBILITIES

In addition to fulfilling the roles and responsibilities delegated to them by legislation and described in section 2.1.1 of this report, the ministries would use these governance arrangements to arrive at consensus decisions and recommendations. Table 3 recommends additional responsibilities for adoption in the longer-term.

Table 3: Suggested additional road safety responsibilities for each Ministry

Ministry	Suggested longer-term additional responsibilities
PWD	<ul style="list-style-type: none"> • Lead agency support for national road safety decision-making governance and coordination through operation of the NRSC; development with VPF of the crash data system operation and data sharing and analysis; and leading and facilitation of strategy, target and action plan preparation • Support legislative agenda and business case template for road safety investment, including value of each fatality and each serious injury avoided, with support from DOFT • PWD infrastructure safety measures in all new projects and a program of retrofitting of safety features to existing infrastructure plus a review of speed limits across all roads to reduce the risk of fatalities and serious injuries.
VPF Traffic Unit	<ul style="list-style-type: none"> • Expanded deterrence activity to enforce legislation and regulation, through support from NRSC • Implement campaigns to support enforcement priorities and timings.

Ministry	Suggested longer-term additional responsibilities
	<ul style="list-style-type: none"> Exploring introduction of an electronic infringement system for use for speeding and drink driving offences
MoH	<ul style="list-style-type: none"> Health system trauma management and testing of Blood Alcohol Concentration (BAC) levels in blood samples from all drivers involved in crashes Retrieval of injured road users from the roadside.
MoET	<ul style="list-style-type: none"> Development and provision of new specific and limited scope school road safety programs (for pedestrian safety, bus use safety, bicycle use safety and seatbelt and helmet wearing) School community involvement in, and support for, improved road safety measures outside school gates.

NATIONAL ROAD SAFETY VISION AND STRATEGY

A national road safety vision indicates commitment of a government to improve road safety outcomes. It motivates stakeholders and encourages behavior change, generates actions to deliver road safety improvements, creates demand for data collection for forecasting and monitoring, and ultimately leads to results.

As such, once GoV have established road safety management arrangements and there are sufficient supporting regulatory frameworks, then a national road safety vision, strategy and time-based targets should be developed and implemented. This will be critical for the planning and delivery of required interventions. The vision sets the goal for road safety aspiration in Vanuatu and should set the country on a journey towards eliminating road crash fatalities and serious injuries in the future.

It is recommended that some preliminary enabling activities be addressed and implemented in the first two years. This will raise the dialogue of road safety amongst GoV and the Vanuatu community and commence the relevant ministries working together. Following this, GoV will have the capacity to develop a national road safety vision and strategy, through a whole of government approach. There will need to be some long-term external support to promote this and the broader agenda.

The training and knowledge development program for GoV road safety related personnel needs to be substantial and adequately resourced to ensure it takes place and achieves critical mass in terms of spreading understanding. Without the development of an informed group of GoV officers in key ministries (NRSC and associated working group), focused on strengthening institutional functions, enabling actions and final interventions, achieving meaningful and sustainable road safety progress will be unlikely.

CAPACITY BUILDING

There are significant capacity restraints among key road safety stakeholders that are required to be addressed in order to support the effective development and implementation of road safety interventions. Improved capacity and technical knowledge for road safety stakeholders is vital to ensure adherence to good practice and to provide guidance based on international approaches.

To support the effective delivery of strengthened management functions and key priority interventions, capacity-building through training of key roles is necessary. This includes the training of:

- All relevant ministries and organizations in road safety principles (for example, the Safe System Approach);
- All members of the NRSC (to be established), in strategy and action plan development, delivery and performance monitoring;
- Local health staff as paramedics;

- VPF in crash investigation and road crash data collection;
- VPF in crash data management, analysis and sharing/coordinating with other ministries;
- VPF in drink driving enforcement and speed enforcement;
- PWD, VPF, Port Vila Municipality, MoH, and other relevant ministries in crash data analysis and transforming data into meaningful programs in road safety; and
- PWD in road safety engineering, conducting road safety audits and inspection, and building safer roads.

This training should be provided through consultation with ongoing technical assistance from existing and future partners. For instance, established connections between VPF and the Australian Federal Police and Victoria Police (Australia) and between PWD and DFAT, World Bank, JICA and ADB could be extended to provide elements of the above capacity building requirements. These and other international donors and partners must recognize the role they need to play in facilitating progress in the area of road safety in Vanuatu.

It is recommended that a dedicated road safety position in PWD be established to support the road safety agenda and the responsibilities for PWD outlined in Table 3.

2.2 LEGISLATION

There needs to be appropriate legislation in place to support the road safety task, requiring an effective policy development process by government and a subsequent legislative development process for parliamentary consideration. Legislation for road safety roles and responsibilities for ministries and for intervention activity is most important. Legislation typically relates to road and vehicle standards and user behavior and should be regarded as a continuous improvement opportunity with regular (often minor) amendments to legislation and regulation, in addition to major legislative initiatives.

A multi-ministry governance structure should be established for decision making to encourage legislative initiatives to be developed and debated and to enable points of difference to be resolved across the departments involved in road safety. The governance mechanisms suggested in this assessment seek to strengthen several institutional management functions including the legislative development and delivery function.

GRSF capacity checklist seven (see appendix A) was used to inform the below analysis.

2.2.1 REVIEW OF EXISTING PRACTICES

Many intervention-related gaps exist in the current legislation associated with aspects of road safety in Vanuatu. These include (and are detailed further in section 3 of this report):

- No BAC limit for drivers (however, there is draft legislation for a BAC limit of 0.03 percent for all drivers that is planned to be tabled in Parliament in coming months);
- No allowance for use of speed detector equipment;
- No vehicle import safety regulations; and
- No rear seatbelt wearing requirement.

Further, several aspects of the legislation are considered outdated. This was affirmed by a number of key stakeholders, particularly in regard to a lack of legislation, regulation and policies to guide and support current conditions all of which are now physically present in Vanuatu, including sealed roads, line marking, signage, and so on.

The key legislation and policies associated with road safety in Vanuatu are described below (further details of the roles and responsibilities mandated by each is included in section 2.1.1 of this report):

- **Public Roads Act (2014):** The Public Roads Act (2014) is the key legislation regarding the ownership and management of road infrastructure in Vanuatu. It includes items related to the designation, planning, administration, construction and maintenance of public roads. The Public Roads Act (2014) also includes a provision that a road can be delegated to the local government, but at the moment local authorities do not have the capacity to manage the road assets in their provinces. As such PWD currently manages all road assets.
- **Vanuatu Public Roads Policy (2019):** Developed under Section 12 of the Public Roads Act (2014), this policy describes how GoV, through MIPU, will prioritize its public road investments and maintenance to 2040. It covers investments funded from all sources. The Vanuatu Public Roads Policy is binding on MIPU and guides investment programming, planning, and design with external development partners. Four priorities guide the Vanuatu Public Roads Policy:
 - o Priority One: Building a sustainable and efficient ‘core’ road network
 - o Priority Two: Maintenance and emergency works
 - o Priority Three: Road improvements to increase rural basic access
 - o Priority Four: Road improvements to increase safety.

Under Priority Four, GoV are committing to progressively eliminate unsafe sections of road and unsafe junctions as an integral part of its core road sealing program (Priority One). The Vanuatu Public Roads Strategy supports the Vanuatu Public Roads Policy but is not yet approved.

- **Road Traffic Control Act (2006):** The Road Traffic Control Act (2006) concerns the use of roads, including the control and registration of all road vehicles in Vanuatu. It includes the basic provisions for how vehicles should be operated, vehicle standards, registration and licensing (driver and vehicle).
- **Public Land Transport Act (2015):** The main objective of the Public Land Transport Act (2015) is to control and manage public transport in Vanuatu. It establishes the PLTA as the regulator of public transport services. There is also a provision for PLTA to use breathalyzers under this Act, police officers or municipal wardens to impound a public transport vehicle under a series of grounds, and the authorization of staff in PLTA to supervise enforcement by police.
- **Police Act (1980):** The Police Act (1980) provides for the establishment, organization, discipline, powers and duties of the VPF. It has no specific sections or articles relating to traffic or road user enforcement.
- **Law Reform Commission Act (2016):** The VLRC is mandated by the Law Reform Commission Act to review, recommend and reform the laws of Vanuatu as amended from time to time. In this way, all law reform or legislative review is centralized.

Two new Land Transport Bills initiated through progressive action by CIR are nearing readiness, to be submitted to Parliament. The Bills refer to a review of vehicle registration and annual tax, driver licensing, road user rules and enforcement.

Given that no coordinated road safety leadership currently exists in Vanuatu, the current approach to recommending improved or new road safety legislation relies on the proactiveness of individual ministries. The process for reviewing existing laws and creating new laws is summarized below:

1. Initiation from ministry or department

2. The ministry, upon request from the VLRC, completes an approved TOR Form for the proposed reforms
3. The Completed TOR is submitted to the VLRC for approval (or requests further dialogue and resubmission)
4. Once approved, the VLRC commences a review and produces an Issue Paper
5. Consultation with stakeholders
6. The Paper and recommendations are handed over to the requesting ministry or department

The Vanuatu Constitution also recognizes kastom law as part of the laws of the country. Reconciliation in the kastom system can lessen sentences in the formal justice system, however kastom law does not surpass the Constitutional legal system.

2.2.2 RECOMMENDED NEW PRACTICES

An improved coordinated governance partnership between the road safety related ministries would strengthen the effectiveness of legislative development and the likelihood of its carriage at Cabinet level. The development of a well-coordinated legislative process through the MJCS, originating with policy advice from the relevant ministry and NRSC (and eventually the ministerial group) being presented to the Cabinet, and (if adopted) proceeding through legislative drafting to the Parliament as a Bill, for consideration, would ensure priorities indicated to the SLO reflect current important needs. This would build on the already established legislative drafting and law reform processes. Legislative adjustments on an ongoing basis are a vital tool for strengthening road safety deterrence. The coordination arrangements recommended in section 2.1.2 of this report will assist in obtaining shared support across the key road safety agencies for any new regulations, legislation or whole of government systems augmentation.

The review and update of the Road Traffic Control Act (2016) to strengthen behavior change measures to reduce fatalities and serious injuries should be treated as a priority and this is reflected in the priority activities list included in section four of this report. VPF, MoH, PWD and PLTA should each provide input to this through the development of recommended policies to be used as a basis for the revised legislation. Support could be sought from international donors for this task. Other relevant legislation should also be reviewed in due course.

Obstructing barriers to the adoption of the proposed current Land Transport Bills should be addressed where possible to allow for their acceptance as soon as possible. This will require senior level champions, preferably the Minister of MIPU and the Prime Minister.

There are also several improvements that could be made to the existing legislative instruments for the benefit of road safety and crash reduction. A number of priority interventions identified in section three of this report (also noted above in section 2.2.1) will require legislative action and many existing measures will require ongoing legislative, regulatory and systems adjustment and strengthening to improve their effectiveness. These recommended improvements are detailed in section three of this report.

2.3 FUNDING AND RESOURCE ALLOCATION

For road safety to be a primary government priority, it must be supported by adequate annual budget allocations. Road safety funding mechanisms can then be established, and progressively become more sufficient and sustainable for the road safety task. Funding needs to be made available for investment in a comprehensive action plan of improvements to infrastructure safety, enforcement, licensing, vehicle registration, offence systems and post-crash care investments.

In Vanuatu, each of the road safety related government agencies need to resource and develop its capacities to address road safety challenges, which represents a new field of professional activity in the country. GoV also has an opportunity to develop strong business cases for road safety investments. This capacity will need to develop over time as understanding of key crash risks and their distribution and extent on the network, as well as cost-effective programs to treat them become better known.

GRSF capacity checklist eight (see Appendix A) was used to inform the below analysis.

2.3.1 REVIEW OF EXISTING PRACTICES

Limited funding is currently made available and there are no clear, sustained funding mechanisms available for continued investment in improving road safety outcomes in Vanuatu. The current funding streams for roads consist of the following:

- GoV's annual and supplementary recurrent budget allocations for road 'operations', sometimes supplemented by bilateral development partner grants, such as from the Government of Australia; and
- GoV budget allocations for approved New Project Proposals, which are primarily funded by loans and grants from multilateral and bilateral development banks.

Despite road improvements to increase safety being one of four GoV public roads priorities (Priority Four), dedicated funding and resources are not allocated. Rather, it is grouped with the general remit of MIPU to build a sustainable and efficient 'core' road network (Priority One). Whilst the Public Roads Policy should be commended as an excellent annual and medium-term works planning process, and the grouping of these two areas of priority is logical, it is not clear how effectively, if any, resources are being allocated to successfully achieve the desired road improvements to increase safety. Anecdotally, funding is often exhausted by MIPU priority areas one-three, leaving limited amounts for road safety.

The enforcement and behavior change task is also provided with only limited funding and resources. As described in section 2.1.1 of this report, the Traffic Unit of VPF is understaffed with resources not based on all islands with roads. In terms of equipment, VPF have no random breath testing (RBT) machines and no speed radar guns, and there is no legislative authority for an enforceable BAC limit to deter drink driving.

Across the whole of government there are no dedicated road safety units or positions.

2.3.2 RECOMMENDED NEW PRACTICES

GoV, through PWD and other members of the NRSC (with support from DOFT), should progressively develop strong business cases for road safety investments to be considered at ministerial and cabinet level based on cost effectiveness and cost benefit analyses. The relationship between road safety and economic development is undeniable and has been widely studied (Bliss and Breen 2008). In 2017, the World Bank published an extensive study showing the economic benefits of

reducing crash fatalities and injuries. Their key findings, which are particularly relevant to Vanuatu and other Pacific Islands, include:

- Increased road safety significantly benefits the youth and the working class and thus contributes to GDP growth; and
- There is strong evidence that reducing current levels of road injuries by half over 24 years could translate into additional GDP growth: 7.1 percent in Tanzania, 7.2 percent in the Philippines, 14 percent in India, 15 percent in China, and 22.2 percent in Thailand.

Social benefits of road safety significantly contribute to increased productivity, hence economic growth (World Bank 2017). The preparation of a business case and its negotiation with DOFT through the NRSC for investment in road safety interventions is the critical approach for achieving funding and resourcing support. A well-prepared business case based on research and a strong evidence-base will provide support for particular investments where the positive potential economic return on investment to Vanuatu in terms of the value of lives saved and injuries avoided can be appreciated.

Agreement on the value of a life and serious injury in Vanuatu is required to enable the development of these business cases. It is estimated that the cost of a road fatality for a country is 70 x GDP per capita and the cost of a serious injury is 0.25 x the fatality cost (McMahon and Dahdah 2008). Well-designed and carefully crafted interventions typically deliver a high benefit to cost ratio over the life of the intervention.

To develop a program of safety treatments for infrastructure, comprehensive crash data or an International Road Assessment Program (iRAP) assessment is required (neither of which are currently available in Vanuatu). Table 4 below provides an indicative estimate of the business case for safer roads in Vanuatu. The indicative estimate, which is calculated by the GRSF, estimates that major annual reductions in fatalities can be achieved with a targeted investment of US\$20.9 million in road safety infrastructure and speed management to upgrade the safety of existing infrastructure (as distinct from new roads) to achieve all 3-star roads or better. This would also result in an economic benefit of US\$173.9 million over 11 years. These estimates would be useful as an interim measure until specific agreed values of benefits (such as reductions in lives lost and serious injuries incurred, times the agreed values of life and serious injury) can be determined. A suggested means to determine these values of benefits is for PWD to implement a brief analysis project in association with DOFT of the value of a fatality and of a serious injury, drawing upon international expertise if necessary.

Table 4: Economic Benefits for Building Safer Roads in Vanuatu (World Bank 2020)

Business Case for Safer Roads	
Infrastructure and Speed Management Investment required:	\$ 20.87 million
Annual Investment as a % of GDP (2019-2030):	0.19%
Reduction in fatalities per year:	17
Approximate reduction in fatalities and serious injuries (FSI) over 20 years:	3,700
Economic Benefit:	\$ 173.9 million
	B/C Ratio: 8

Funding and resource allocation should be built on an understanding and acceptance that selected measures do exist which will reduce fatalities and serious injuries at a cost that is much less than the generated economic benefits. There are two key areas of investment required:

- The first is that adequate recurrent budgets for establishing and strengthening the basic road safety capacity of ministries are established; and
- The second is that additional investment funding is identified to support programs and projects, which will deliver reduced fatalities and serious injuries.

CAPACITY BUILDING

It is essential that each of the government ministries involved be adequately resourced (requiring annual staffing and support allocations) to have progressively appropriate road safety operating capacity. In the first instance, it is recommended that a position is identified within PWD to be a focal point for road safety training and development across GoV. This would support PWD's lead agency role and road infrastructure safety responsibilities within the Safe System framework. Additionally, it is critically important that VPF be resourced adequately to support their speed and drink driving enforcement activities. The road safety capacity of resources within other relevant ministries should be progressively developed.

Adequate resourcing of additional enforcement by the VPF Traffic Unit to begin enforcing drink driving and speed compliance will dramatically reduce deaths and serious injuries. This would include resourcing to allow for the purchase, and training in the use of, speed radar guns and RBTs in due course. The safety and the well-being of the Vanuatu community on their road network will depend on resourcing these augmented enforcement tasks.

Significant training and capacity-building funding will be required to build the local capacity to envisage, plan and prioritize these programs (beyond the already operational planned new demonstration corridor works, such as the Vanuatu Climate Resilient Transport Project) either from Ministry's existing budget allocations or under new corridor treatment projects. Key to this will be ensuring VPF and PWD are trained to analyze crash data to identify key risk factors influencing high crash occurrence and locations.

INVESTMENT FUNDING

As GoV's basic road access targets of 70 percent of all rural Ni-Vanuatu to have basic road access by 2040 are delivered and roads throughout the country are progressively sealed, it is critical that adequate attention, funding and resource allocation is provided to infrastructure safety measures to deliver adequate levels of inherent safety. This could potentially prevent future safety problems and related costs from arising. An adequate budget for infrastructure upgrades to improve safety risk is essential. Infrastructure upgrades can be done through a number of programs such as:

- Maintenance programs;
- New road projects/programs;
- Mass action treatment programs; and/or
- Blackspot/blacklength programs.

The recommended categories of programs of expenditure to address infrastructure safety needs in Vanuatu (new and retrofitting needs) are set out schematically in Figure 17 below. A substantially robust program is suggested in the early years to allow for the program to establish and resolve potential change management issues.

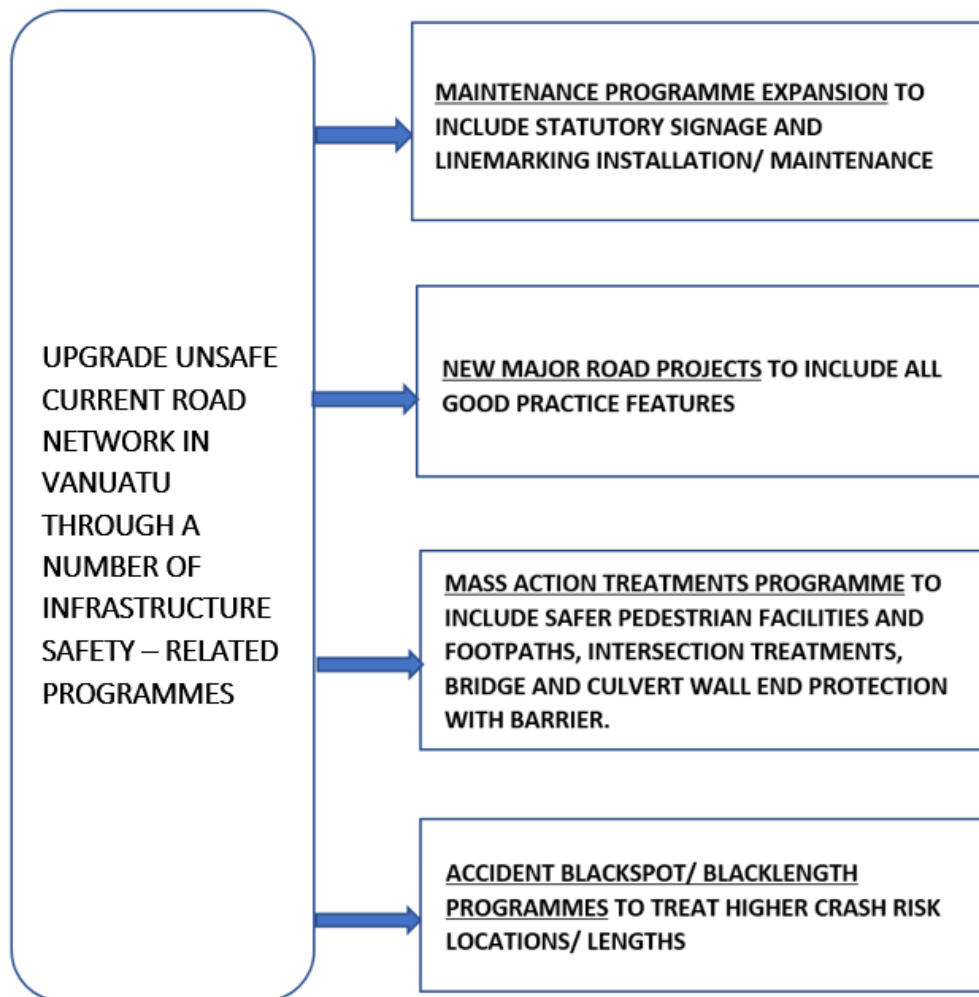


Figure 17: Categories of infrastructure safety investment required in the decades ahead

Mass action project funding will be quite small scale but would include footpaths and pedestrian crossing improvements with pavement platforms, solar powered street lighting at crossings and intersections, pedestrian median refuges, speed management through traffic calming measures at highly pedestrianized areas and large highly visible reflective signage for motorists at pedestrian crossings. Barrier protection of bridge end posts and culvert end walls would also be considered in this program. Local knowledge and any crash data available should be used to ensure higher risk locations are treated as a priority.

Blackspots and blacklengths are locations on the road network or road lengths with a proven history of crashes (Australian Department of Infrastructure, Transport, Regional Development and Communication 2017). Having an understanding of these locations with recurrent problems ensures that funding can be prioritized to target them first for improvements or treatments. Blackspots and blacklengths should be allocated a specific percentage of funds within PWD’s maintenance budget. Adequate human and financial resourcing to oversee the development and delivery of these projects will be required.

More information on blackspot and blacklength programs are provided in section 2.5 (referring to crash data) and section 3.2 of this report.

Blackspot treatments and mass action treatment programs—including pedestrian safety measures such as footpaths and pedestrian crossing safety platforms, plus inclusion within the road maintenance budget of installation of statutory road signage and line marking and so on—is required for PWD and the municipalities, with annual progression from initial levels to a program which appropriately addresses higher risk issues.

Figure 18 suggests implementing a maintenance program that includes signs and line marking activity from the end of 2022, in addition to a mass action program implemented progressively from the start of 2024 across the entire network. This would be followed by a progressively increasing budget allocation for blackspot treatments from 2025. This investment profile recognizes that it will take some time to establish these programs, particularly for the blackspot program which will rely on robust crash data.

The allocation necessary to get the blackspot program started in 2024 needs to be determined. A smaller allocation should be planned in 2024 but increasing progressively by 2027 and further by 2030 (Figure 18). This slow but steady increased resourcing for blackspot and mass action programs will be necessary as there is quite a process of training and learning required for data collection and analysis, the selection of the economically superior treatment options and the bringing together of a program including planning, design and delivery activities. These skills will need development over a number of years.

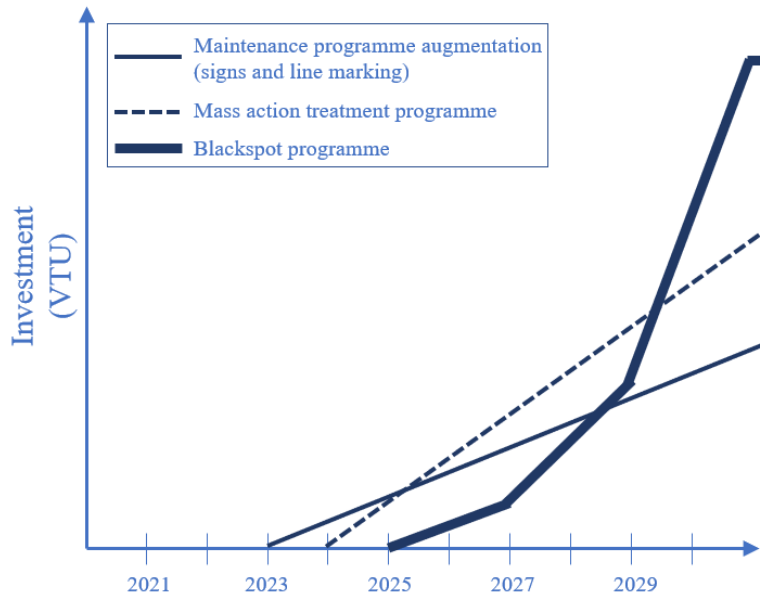


Figure 18: Indicative Investment profile for infrastructure safety by type of program for initial six years

It is also critical that improved road crash data collection, behavior change campaigns to support enforcement and understanding of the Safe System vision are supported by adequate funding and resource allocation. The project focus in the early years will be on lower cost measures, moving over time to more extensive and substantial programs, especially for infrastructure and enforcement.

Most vehicle safety initiatives could be implemented at a low cost to GoV as the cost of newer safer vehicles would be borne by individuals and organizations. Costs to government in introducing a graduated licensing system (detailed in section 3.4 of this report) in time would be a one-off cost.

To meet these funding requirements, it is recommended that a road safety fund be established in 2022 with an allocation from consolidated revenue. A review of funding sources for the longer term should be carried out, including the introduction of an annual levy on road crash injury insurance premiums (potentially VT450 per policy initially) and the net proceeds from road fines. These options could be the basis for the operation of the fund, to be overseen by the DOFT and the NRSC and which would reduce the crash risk faced by the Vanuatu community over time.

The health system will also require funding for the establishment and ongoing improvement of trauma care facilities and improved post-crash care response.

There are opportunities to introduce a small extra annual premium for injury insurance that would go to a centrally controlled government fund to fund high priority road safety activities. This would be in addition to usual budget allocations. Substantial detailed planning would be needed before such a fund was established. GoV would need to determine how the fund would identify and prioritize road safety projects to be financed by the fund, as well as the accepted decision making, governance and oversight arrangements for the fund. In theory such a fund would provide major benefits to Vanuatu over the next twenty years and beyond and ameliorate future injury insurance claims costs to the extent that projects were high return in terms of reducing fatalities and serious injuries.

2.4 PROMOTION

Leaders of government agencies involved in road safety are required to develop evidence-based road safety programs and to advocate for the strategic direction for road safety in order to ensure sustained commitment at the highest level (OECD 2008). This is first and foremost advocacy to the most senior government levels, but it also includes later stage specific public consultation and campaigns to increase community road safety understanding and deliver changes in behavior.

GRSF capacity checklist nine (see appendix A) was used to inform the below analysis.

2.4.1 REVIEW OF EXISTING PRACTICES

There is little available evidence of effective and strategic provision of road safety information to advise senior government officers and the ministerial level of the availability of potential measures which, if adopted, would lower fatalities and serious injuries and deliver associated economic and social benefits for Vanuatu.

In addition, a lack of community awareness of how to use roads among all types of road user was highlighted as a challenge by the stakeholders during the review meetings. There are currently some basic elements of road safety included in the schooling curriculum although this does not appear to be standardized across Vanuatu. VPF, when requested by individual schools, have delivered road safety information sessions to students. Broader community education includes VPF presentations on various topics, including road safety, on the radio on Friday evenings.

2.4.2 RECOMMENDED NEW PRACTICES

The major challenge is achieving understanding of the scale of the road safety problem when promoting upwards to the senior bureaucratic level in all government ministries and to senior executives in the private sector. It is imperative that these parties are made aware that reducing the levels of road trauma is not only desirable, but that the means to do so are readily available. A strong target for reduction of fatalities and serious injuries can be considered achievable and can be delivered if appropriate action is taken by GoV. The implementation of a lead agency and coordination arrangements as discussed in section 2.1 of this report, and will assist with this effort, with most of the responsibilities for the working group, the NRSC and PWD.

Effective upward and lateral advocacy of road safety concepts and of potential interventions to members of the community and parliamentarians from mid-level and senior officers is required. In addition, constant consultations with communities are required before and after implementing infrastructure interventions to address possible negative impacts. Examples of a small set of issues where this situation is likely to apply would include a new graduated licensing system, the introduction of a BAC limit for drivers, and measures to improve public transport operations. Increasing capacity of government officials in road safety benefits and practices through exposure to international best practices may be necessary.

2.5 MONITORING AND EVALUATION

The quality of decisions made on road safety initiatives reflects the quality of road safety data in a country (Montella and others 2012). Without data, it is more difficult for stakeholders to realize the magnitude of the road safety problem and prioritize it over other issues (Barffour and others 2012). Road safety data is essential to identify and determine the nature of issues and formulate corresponding strategies and actions. It enables government and stakeholders to invest resources, design cost-effective programs and monitor road safety performance (Barffour and others 2012). It also enhances accountability of road and transport providers, traffic enforcers, and policymakers (Gudmundsson and others 2016). Ultimately, data is required to effectively implement the Safe System Approach (WHO 2010). The complex nature of road safety therefore requires the synergy of different scales and types of road safety data. While fatal and serious injury data (derived from integration of sources such as police reports, hospital data, civil registries, and even health survey data) is the most important to inform the effective implementation of Safe System policies, exposure data (for example, the number of vehicles or licenses, volume of traffic, among others), safety performance indicators (for example, the number of vehicles exceeding speed limits, number of drivers exceed alcohol limit, seatbelt and helmet wearing, and iRAP data), and even surrogate safety measures (such as traffic conflicts, traffic speeds before and after interventions) for individual sites and overall, at the local, regional, and national level, can provide a comprehensive understanding of road safety challenges.

GoV should strive to make sure that these data are robust and reliable and that information is shared with stakeholders. These will enable them to effectively perform their responsibilities in road safety. For example:

- Road infrastructure providers will need data to determine high-risk infrastructure, design roads with appropriate speeds, and remove road hazards;
- Traffic enforcement agencies will need data to be able to deliver effective road traffic safety enforcement operations;
- Transport ministries will need data to come up with mandatory safety equipment in vehicles; and
- Researchers will need the data to innovate and conduct in-depth road safety studies.

GRSF capacity checklist 10 (see appendix A) was used to inform the below analysis.

2.5.1 REVIEW OF EXISTING PRACTICES

In Vanuatu, road safety data is not shared between government ministries and the robustness of the data collected within individual ministries is not known. The inaccessibility of road safety data, and lack of usage and analysis by key government ministries, especially PWD, is a critical issue and relates to the current absence of road safety results focus and coordination in Vanuatu. Each government ministry does not have access to road crash data from VPF, injury data from MoH, and other types of data from individual ministries. The lack of data sharing and analysis then prevent the government from having a comprehensive understanding of road safety issues which then results in a lack of an over-all strategy in road safety. When data collection and effective analysis is not coordinated and managed across agencies, it becomes difficult to develop evidence-based and results-focused interventions as well as effectively monitor and evaluate outcomes.

The following sub-section provides more detail and primarily discusses gaps in road crash data collection and, to the extent possible, other road safety data in Vanuatu.

VPF – POLICE INFORMATION MANAGEMENT SYSTEM

Collection, analysis, and management of crash data remains a key issue for Vanuatu and, more particularly, the VPF. The VPF acknowledges the problem it faces in maintaining a reliable set of crash data, sharing this to other relevant ministries, and analyzing the data to inform evidence-based decisions in road safety. Currently, the VPF uses Police Information Management System (PIMS) to record criminal incidents in Vanuatu which includes cases on road crashes.

PIMS was introduced to Vanuatu in 2015 as a component of the Vanuatu-Australia Policing and Justice Program (DFAT 2019). The development and implementation of PIMS aimed to capture all criminal incidents, monitor and manage investigations, and store criminal history (Cullen 2017). It is intended to be available in all police stations throughout the country and used by the entire VFP. As part of the roll-out of PIMS, capacity-building trainings on how to use system were held as well as procurement of needed equipment such as computers and internet. Ever since its introduction, more criminal records have been consolidated by the police. PIMS is linked to the Court Management System (CMS) which is used for assigning and scheduling cases, tracking individuals and cases, and managing documents. CMS is maintained and operated by the MJCS.

The actual data collection process is relatively straightforward (see Figure 19):

- police attend to the crash scene;
- fill out a paper form; and
- encode the form into PIMS

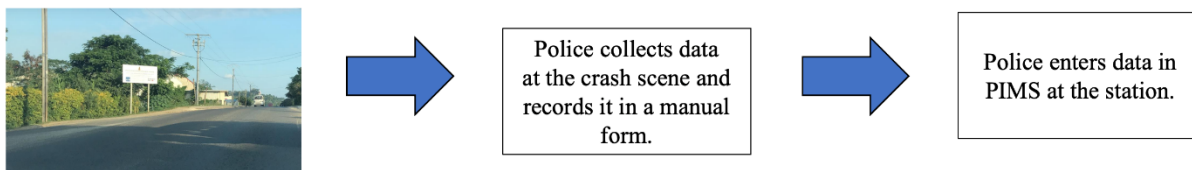


Figure 19: Data collection process

In addition, the following have been observed:

- **PIMS is meant for prosecution purposes and thus lacks data elements related to road safety** - Given that PIMS is primarily used for recording crimes, PIMS do not contain data elements that are specific to road safety such as details on injuries, road infrastructure, and safety performance.
- **No standard definition for fatalities and injuries** - While police are able to receive medical reports from health facilities when a person involved in a road crash dies, this is not standard practice for every road crash. There is no standardized definition for fatality and this varies for every case. There is also no indication that a standard injury severity classification system is used to have a reliable number of road crash injuries. It is also unsure whether records in PIMS are updated when there are changes in injury classification.
- **The manual forms are open to interpretation and errors** - This makes the data highly prone to error especially since recording of data in PIMS is made at the station. Data entry is not standardized, handwriting can be illegible, and the manual form can be vulnerable to loss or damage. When the data is uploaded into the system, it may contain incorrect and incomplete information. This is supported by the assessment done for PIMS which highlights that data correctness and completeness is a problem (Nichols and others 2019).
- **Limited staffing and technical resources** - There are challenges in the maintenance of PIMS both in terms of staffing and technical resources. Only a few can manage the system and there is also a lack of funding when it comes to the provision of IT infrastructure (Nichols and others 2019). Adequate equipment, energy, and internet are problems in Vanuatu. It is also not known whether the VPF has the technical resources to troubleshoot issues in the system or implement future updates and enhancements to the system.
- **Data is not used to inform road safety decisions** - While PIMS includes analytical tools that enable analysis of crime incidents, police do not use and analyze the data to support road safety programs. PIMS can generate reports disaggregated by particular variables such as gender. It also allows users to identify high crime rate areas to enable targeted enforcement and effective use of resources however these are not used. This can partly be due to the lack of capacity-building but can also point to an over-all lack of attention given to road safety.
- **Data is not shared to other ministries** - PWD and the other ministries do not receive road crash data from the VPF.

It is also possible that fatalities and serious injuries are not reported to the police and hospitals for reasons aside from formal data systems and data collection processes. Such reasons can include difficulty of reporting from remote islands, religious customs and beliefs on burial and treating the dead, costs, among other possible reasons.

Aside from issues related to data collection, data available in VPF are often underreported because people might feel that they do not have to report the crash to the police. The reasons identified include because a crash is a hit-and-run case, the case is amicably settled between involved parties, the crash was a single-vehicle collision, among others. Therefore, these inherent gaps in police data require authorities to integrate these data with other sources of data to fully understand the road safety situation.

In addition to crash data, VPF also has enforcement data such as data on traffic violations although data on speed, drink-driving enforcement, and seatbelt and helmet-wearing are inadequate. This is mainly due to the lack of awareness, legislation and associated enforcement. There is also a lack of data on speed violations because of the lack of speed limit signage which makes enforcement difficult.

MOH – DISTRICT HEALTH INFORMATION SYSTEM AND EMERGENCY MEDICAL RECORDS

The Health Information System (HIS) Unit under the MOH is the main department which collects, stores, manages, and disseminates health information in Vanuatu. They do this primarily through the District Health Information System (DHIS) but also through conducting health surveys. In 2018, the DHIS: “is presently accessible only at the six primary provincial (urban) hospitals. The aim is to extend the system to all 36 health centers within two years, to all 190 dispensaries within four years, and ultimately to all aide stations by 2021” (Jack 2018).

While there has been significant progress in establishing an efficient and effective health information system in Vanuatu, data still needs to be improved, in particular on road traffic fatalities and injuries. The collection of health data through the DHIS involves healthcare workers and providers at each level of the health system (On and others 2009) who then report to the HIS Unit. There are issues in the data collection process, more particularly in terms of data standards and definitions, timeliness, accuracy, and compliance (Anderson 2013). One of the main challenges is properly classifying the cause of deaths through the health system which is due to the lack of trained personnel. In addition, there is also an overall lack of staffing and limited infrastructure resources are also a challenge.

The HIS Strategic Plan of 2016-2020 aimed to address these issues. Notable priority actions include establishing a cross-sectoral HIS Committee, developing data standards and definitions, addressing duplication and ambiguities in data, allocating budget for HIS activities at the national and provincial level, among others (MOH 2018).

Aside from the DHIS, the MOH also collects health data through emergency medical records. MOH plans to collect patient data throughout the country and make this accessible. Currently, most of these are stored manually in logbooks and there is no common repository to access emergency data. MOH however is in the process of improving this as they are implementing a new triage system to collect computerized data through excel spreadsheets.

The MOH is working together with Office of the Government Chief Information Officer (OGCIO) to improve these database systems as well as integrating these with data on medical supplies and data shared to international organizations such as the WHO (Jack 2018).

MINISTRY OF INTERNAL AFFAIRS, CIVIL REGISTRATION AND VITAL STATISTICS DEPARTMENT

The Civil Registration and Vital Statistics Department within the Ministry of Internal Affairs manages vital statistics through a civil registry system which is now accessible to all provincial hospitals (Jack 2018). They are able to collect cause of death data which is relevant to road safety however this needs to still be improved as the government struggles to identify the cause of death using the International Classification of Diseases (ICD) (Lenge 2019). The ICD is a global standard that enables comparability of data among countries. Other identified issues in implementing the civil registration system include issues on the process as well as the need for supporting legislation and policy.

PWD – ROAD INVENTORY MANAGEMENT SYSTEM

The PWD maintains the asset management database which currently stores data on road conditions and defects in addition to organizing road infrastructure data. This database system is currently undergoing improvement with support from development partners. However, it is not used together with crash data from PIMS or other types of data such as safety performance indicators. In addition, there have also been no iRAP assessments conducted on the country's roads.

Other types of data such as data on safety performance indicators (for example, mean speeds, drink-driving, data on public transport, data on the vehicle fleet) do not currently exist. While there is data on traffic counts, these are only limited to major roads, not shared to other ministries, and not used for road safety purposes.

CIR – LICENSING AND VEHICLE REGISTRATION SYSTEMS

Vehicle registration data and licensing data access and storage is one of the challenges of the CIR. It is difficult for them to obtain timely data and share this data with other stakeholders, such as the VPF. To address this the CIR is currently

upgrading their vehicle registration and licensing management system. This new system will be a web-paged system and can be accessed by other line agencies and authorized users, most critically the VPF. This system is expected to be operational in 2021. Manual forms for obtaining driver's license and registering vehicles are provided in appendix F.

VANUATU NATIONAL STATISTICS OFFICE - CENSUS, SURVEYS, AND SPECIAL REPORTS

The most recent complete census report conducted by the Vanuatu National Statistics Office (VNSO) was published last 2009. Since then, the VNSO has undertaken a mini-census in 2016 and is now in the process of finalizing a complete census for 2020. The census reports provide reliable and accurate aggregate data concerning different aspects of the country such as the population, economy, health, education, and poverty. While there they do contain mortality data, the census reports do not identify the causes of death which can be used to monitor crash fatalities. Census reports also do not include data on transport modes used by the population or the transport, mobility, and road safety issues that they face. Aside from census report, the VNSO also conduct surveys, such as the household income and expenditure survey and demographic and health survey. In addition, they also publish special reports such as reports on well-being and persons-with-disabilities. However, in all these reports data on road safety, transport, and mobility are not included.

2.5.2 RECOMMENDED NEW PRACTICES

Given the context of Vanuatu, collection of data must primarily be simple yet meaningful. Existing database systems should be leveraged and improved upon. Data reporting, sharing, and analysis guidelines should be well-defined. This will entail a comprehensive new governance framework to deliver evidence-based recommendations to government at a high level and achieve outcomes which improve road safety.

While there is a vast array of road safety data, improvements to the collection of road crash data must be prioritized. A comprehensive and reliable road crash dataset should be made available to decision makers and the public to be informed and to monitor intervention effects and detect changed crash risk circumstances. Improved crash data means:

- Data must be easy to access and shared to as many stakeholders as possible;
- Crash data should primarily be collected by VPF but be supplemented by health data from MOH , HIS, and others; and
- Non-crash data such as data on infrastructure, vehicles, road user behavior, road assessments should also be routinely collected and shared.

An immediate consideration for GoV is to define a road crash data collection process to achieve a reliable and accurate dataset of road crashes, the most crucial of which are data on fatalities and severe injuries. This process should maximize the use of existing resources such as the PIMS and DHIS.

For PIMS, the police should be able to access records related to road crashes and then organize it in a form that can be shared to other stakeholders (most critically to the PWD which is envisaged to be the lead agency in road safety). This can be as simple as collating individual crash records and organizing non-confidential data elements in an excel sheet. VPF, PWD, and other relevant stakeholders can agree on the minimum set of crash data elements that can be derived from the individual crash records. These data elements such as details about the incident and geographic reference can be lifted directly from the form used in PIMS. Other data elements which are more specific to road safety such as those relating to the road user (for example, road user type and vehicle type) or road infrastructure (for example, obstacles, road type) can be derived from the narrative portion of the PIMS form. When these are organized in an excel sheet, these can then be sent

to PWD and other stakeholders which they can use for developing interventions. This process should be done regularly (for example, monthly) in order to reduce the length of time needed to accomplish this task. It is important to note that there is an extensive literature on recommended minimum crash data elements and their definitions such as the recent report by the Asia-Pacific Road Safety Observatory on recommended road safety indicators (ADB 2021). This can be used as a guide and reference when finalizing the list of crash data elements for Vanuatu.

For DHIS, the HIS can extract health data relating to road traffic injuries and similar to the process in VPF, collate these data into an excel sheet. This can then be shared to PWD.

PWD will act as the clearing house for these two datasets. They should be able to receive the crash data from VPF and the health data from MOH, and integrate this two to derive a reliable, accurate, non-duplicated dataset on road crash fatalities and severe injuries in Vanuatu. This integrated dataset can then be used to map out where crashes happen in the road network through a third-party geographic information systems software, such as the free and open-source QGIS. This way, PWD can identify high-risk locations, determine road safety issues, and conduct further analysis. This should also be shared to government ministries and other stakeholders in road safety. Figure 20 summarizes and illustrates this proposed data collection process.

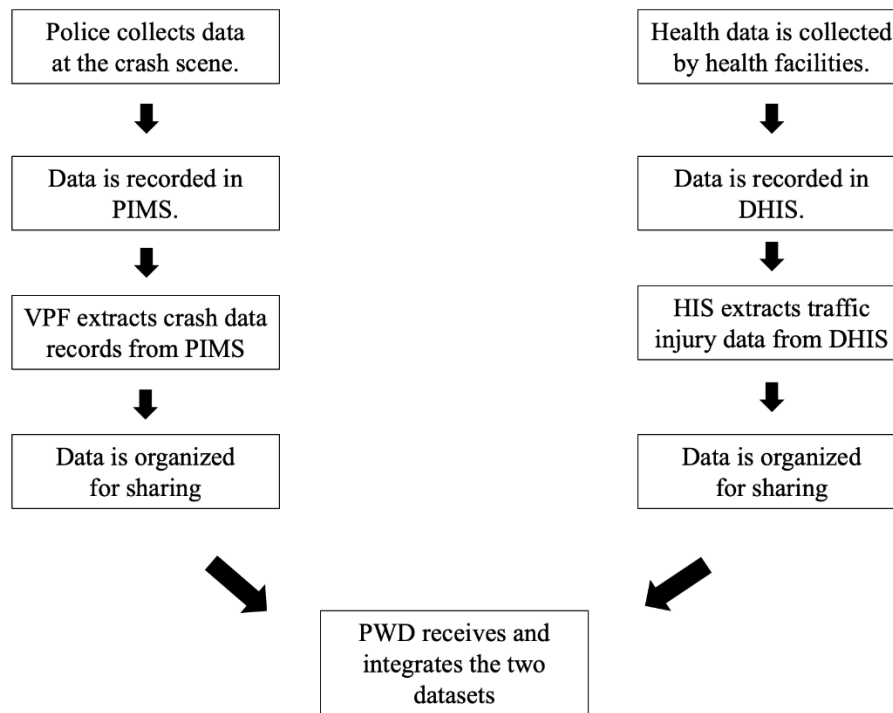


Figure 20: Proposed data collection process

In the future, a national crash database system should be developed. This national crash database system will primarily be used by the police to collect crash data and will pull and integrate data from DHIS as well as data from Road Inventory Management System and licensing and vehicle registration database systems. The PWD in coordination with the VPF will then be responsible in implementing and maintaining this system. There are multiple existing platforms currently available that can serve as the national crash database system. One of which is the Data for Road Incident Visualization, Evaluation and Reporting (DRIVER) system (for more information see appendix G), which is a low-cost, non-proprietary database system already available in the internet. Developing the system should involve determining the needs and capacities of each

of the ministries. It will also be crucial to include the OGCI in these discussions as they have the capacity and mandate to develop information technology for the GoV.

Developing the national crash database system should be part of future activities, but the first priority should be establishing an effective data collection process. A supplementary activity is consolidating, organizing, and mapping existing data for the last five years so that it can be used to develop evidence-based interventions. Further, adequate capacity-building should be provided to users of PIMS so that all of its functions and analytical tools are maximized.

Another immediate activity is for individual ministries to conduct data improvement programs for their own data collection processes and database systems.

VPF should be able to standardize the definition of fatality and injury severity, and these must be aligned with the definitions used by MoH. Other data elements such as person details must also be kept consistent to allow integration between database systems. It is recommended that the definition of a fatality should be within 30 days of a crash. In addition, serious injury crashes can be defined as a person being hospitalized for more than 24 hours because of sustained injuries from a crash while minor or slight injury crashes can be a person being hospitalized for less than 24 hours or not being hospitalized at all. This will require police to be instructed to follow-up data from hospitals, and update records in PIMS regularly. The WHO Data Systems Guide (WHO 2010) is a valuable reference that can guide this activity.

In addition, to the extent possible, data should be collected through a mobile app or a laptop on site but if this is not possible, a manual form can be used. In order to eliminate recording or encoding error, data fields must have assigned values for selection to the greatest extent possible. It is recommended that VPF are equipped with a global positioning system (GPS) device, which could be an app installed on mobile phones. Recording the exact location is one of the most important pieces of information, and the form should not be approved if the field on GPS coordinates has not been completed. Finally, it is recommended that VPF ensures that all police stations have laptops or computers and an internet connection.

On the other hand, MOH should standardize the classification of cause-of-deaths. Adequate training must be provided to the staff to effectively gather this data. The VNSO on the other hand, can gather these data and include them in census reports.

For CIR, they should proceed with their plans in computerizing the licensing and vehicle registration systems.

Aside from technical considerations, GoV should also assess the barriers or disincentives that stakeholders experience in properly reporting crash fatalities and severe injuries. To know more about disincentives in reporting road crash fatalities and severe injuries, it is advisable that the government conducts interviews and focused group discussions with communities and stakeholders. Beyond fatality and injury data, other road safety data such as safety performance indicators should also be routinely collected. These measures are critical tools to readily assess current conditions and track performance of infrastructure, vehicle, and behavior programs. Appropriate intermediate outcomes provide powerful immediate insight about crash risk and support active and focused management of long-term policy matters and their short-term implementation. These indicators should be aligned to the 12 Voluntary Global Targets of Road Safety (WHO 2017), which cover different aspects of road safety. Recommended indicators include:

- **Mean speeds** - Lower mean speeds will reduce fatal crash outcomes on the roads where the speeds are reducing at a rate of four to five percent reduction in fatalities for each one percent of mean speed reduction. If mean speeds reduce by five km/h in a 60 km/h zone from say, 65 km/h to 60 km/h, fatalities on those roads can be assuredly expected to reduce by more than 20 percent. This indicates the informative power of setting, measuring and reporting on intermediate outcome measures. This type of data can be collected by the roadside through speed enforcement devices or through GPS and vehicle monitoring applications. An observational study of mean speeds for each type of road in Vanuatu can be conducted by the PWD as an initial activity.

- **Drink driving detection rates for a constant testing output regime** – The risk of fatal crashes sharply increases as the frequency of drink driving cases increases. It is therefore not enough that the police only collect counts of violations. Rather, a study survey should be conducted together with a research institute. Drink driving data disaggregated by vehicle type, time of day, driver/rider age and gender, are useful data to develop targeted and effective interventions against drink driving.
- **Seatbelt and helmet wearing rates** – Seatbelt wearing decreases the severity of crashes and injuries by 45-50 percent for front seat occupants and 25 percent for rear seat passengers. Helmet wearing for motorcyclists on the other hand, reduce the risk of fatality by 28-73 percent and severe injury by 46-85 percent (Johns Hopkins School of Public Health 2020). This data can be collected at the roadside at high-risk locations by the police together with a research institution.
- **iRAP star rating of new and existing road infrastructure** - iRAP Star Ratings use a well-established methodology tested in different parts of the world in order to assess the safety of road infrastructure for cars, motorcyclists, cyclists, and pedestrians. In a scale of one to five stars, with one star being the most unsafe, and five stars being the safest, iRAP assessments are able to show which sections of the road have become safer or more unsafe after the construction of an infrastructure. In addition, iRAP assessments also provide data on road attributes and how each attribute impacts the star rating of the road
- **Data on Public Transport** - Given that a significant portion of crashes involve public transport, it is recommended that indicators on public transport such as buses and flatbed trucks are implemented. Examples of these are speed limit compliance of public buses, frequency of overloading, mode share for various types of public transport, and frequency of public buses using bus bays or pulling off the through carriageway when setting down or picking up passengers.
- **Data on the Vehicle Fleet Safety**- The quality of vehicles is a key road safety risk factor and those who use unsafe vehicles are more vulnerable to severe injuries and fatalities in a crash. Vehicles can have protection systems that can either prevent crashes from happening or reduce the severity of injuries in the event of a crash. There is a vast literature of recommended vehicle safety standards and these will be discussed later in the report. Some of which include the presence of seatbelts and electronic stability control. The PWD should be able to collect data on the quality of vehicles in the current fleet and if they adhere to safe vehicle standards. Determining the percentage of vehicles in the fleet with high quality safety standards enables the government to effectively assess vehicle safety. Another useful indicator is to monitor the age of vehicles in the country's fleet and more particularly, the median age of the vehicle fleet.

Finally, it will be beneficial for the VNSO to include questions on road safety, transport, and mobility in the census reports as well as related surveys and special reports. Questions on vehicle ownership per household, travel modes, road crash injuries and fatalities in a household can be added in census and survey questionnaires. These types of data can supplement the available crash data and can inform nationwide and larger scale policy and infrastructure interventions.

2.6 RESEARCH AND DEVELOPMENT AND KNOWLEDGE TRANSFER

Research and development (R & D) and knowledge transfer refer to the contribution of research and evidence to road safety policy, programs, and public debate. Technical support through improved knowledge transfer strengthens road safety outcomes.

GRSF capacity checklist 11 (see appendix A) was used to inform the below analysis.

2.6.1 REVIEW OF EXISTING PRACTICES

There is currently no road safety R & D occurring within Vanuatu. The University of South Pacific (USP) in Port Vila, Vanuatu is an international center for excellence for teaching, research, and training. USP's capacity to undertake road safety R & D should be explored and, if appropriate, be leveraged to support the overall road safety program of the GoV.

Data needed for R & D, including crash data and safety performance indicators, is not currently being shared amongst government ministries and other relevant stakeholders.

In addition, the GoV is currently not a member of the Asia Pacific Road Safety Observatory (APRSO), which is the regional forum on road safety data, knowledge, and research. The APRSO should be able to support the GoV to generate robust road safety data and analysis to positively impact on policies and actions in road safety. APRSO provides a platform for decision-makers from countries in Asia and the Pacific to share experiences, exchange knowledge, and learn about best practices to address the road safety issues (ADB 2021).

2.6.2 RECOMMENDED NEW PRACTICES

There are practical knowledge transfer demands in Vanuatu, such as paramedic training of local staff for ambulance roles and increased capacity to calibrate alcohol testing devices and speed guns, which would assist in the development and implementation of road safety initiatives. There is also a need for independent evaluation of proposed road safety policy changes and the effects of related policy implementation.

The community needs independent evidence-based evaluation capacity and information in order to be confident that government measures are delivering projected fatality and serious injury reduction benefits. Nurturing this expertise is a challenge but the tertiary sector should be engaged to provide some initial proposals for establishing capacity starting with evaluation and in collaboration with road safety research organizations based at Australian or New Zealand universities. Collaboration here is crucial so that research and best practice can be contextualized for Vanuatu. This should include a program for comprehensive training and briefing, as well as training of engineering consultants over at least a five-year outlook.

Finally, it is highly recommended that the GoV joins the APRSO as a member country. This will enable the government to not only learn more about road safety research and innovation in the region but also to receive technical support and capacity-building for their road safety activities.

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3. RECOMMENDED INTERVENTIONS WITHIN A SAFE SYSTEM APPROACH

This Road Safety Management Capacity Assessment (RSMCA) is aligned with the Safe System approach to road safety (detailed in appendix B).

The Safe System approach requires a shift from ad hoc one-off interventions (traditional view) to a more systematic and holistic approach to the road safety challenge. Road users are commonly blamed for traffic collisions—for not paying attention of taking unnecessary risks—but this fails to account for the built environment and how it affects travel choice and behavior. Instead of relying on public education, training regulation and enforcement, other variables such as transport governance and planning, road design, and protective road infrastructure must be considered.

Shifting much of the responsibility from the road user to the transport system designers is an important development and is already leading to remarkable change - countries with a Safe System approach to road safety have reduced traffic deaths and serious injuries to lower levels at faster rates, than those without.

Global Road Safety Facility (GRSF) Online Road Safety Training Program (2020)

The Safe System includes six road safety intervention pillars:

- Road safety management
- Safe roads and mobility
- Safe vehicles
- Safe road users
- Post-crash care
- Safe speeds.

The following sections provide commentary on the existing practices in Vanuatu, as well as recommendations relevant to each Safe System pillar. The success of the recommendations will to a large extent depend on the level of ambition and aspiration expressed by the Government of Vanuatu (GoV) to improve their road safety outcomes. Appendix A also includes completed GRSF capacity checklists for Vanuatu in relation to the Safe System approach.

3.1 ROAD SAFETY MANAGEMENT

Road safety management (pillar 1) draws on institutional management functions and management practice to make interventions occur. As such, matters of road safety management have largely been detailed in section 2 of this report. Interventions, described in detail in sections 3.2-3.6 of this report, seek to manage exposure to the risk and consequences of serious injury crash outcomes. Road safety needs to be produced much like other goods and services. This ‘production process’ implements interventions that deliver improved road safety results and it can be viewed as a management system with three interrelated elements: *Institutional management functions* outlined in section 2 of this report, which enable production of *Interventions* (this section), which are Safe System focused in nature, to produce *Results* over a period of time, usually specified as a national target for reductions in fatalities and serious injuries.

3.1.1 REVIEW OF EXISTING PRACTICES

The road safety ‘production process’ is yet to be established in Vanuatu and this capacity review will provide guidance about that process and the development steps, institutional arrangements and other supports that will be required to deliver it as an effective means to initiate and continuously improve road safety performance. Specific detail on the current road safety management practices in place in Vanuatu is provided in section 2 of this report.

3.1.2 RECOMMENDED NEW PRACTICES

Vanuatu requires the establishment of various aspects of road safety management in order to improve road safety outcomes. Management skill in leading the strengthening of institutional functions and developing the process of analysis of crash data to identify and implement interventions in a prioritized cost-effective manner will be critical. Adoption of a vision, and preparation of an initial priority activities plan (to be followed by strategy and action plan in the future) to address those issues and the adoption of an ambitious but achievable performance outcome target for fatalities and serious injuries for the medium term and the long term will be needed. Establishing appropriate levels of funding when informed evidence-based business cases can be prepared and developing monitoring and evaluation of interventions and overall performance over time, will also be critical steps.

Committed leadership will be required from the most senior government leaders to support the necessary priority government and community-led actions and to develop and promote the narrative necessary to support communicating the potential benefits of this change.

Recommendations for all institutional management functions are included in section 2 of this report.

3.2 SAFE ROADS AND MOBILITY

Safe roads and mobility refer to raising the inherent safety and protective quality of road networks for the benefit of all road users, especially the most vulnerable road users (for example, in Vanuatu these are pedestrians and public transport users based on available evidence). This will be achieved through the implementation of various road infrastructure interventions to retrofit improved safety to existing networks, road infrastructure assessment and improved safety-conscious planning, design, construction and operation of roads. As described in section 3.4 of this report, road users do have a responsibility for safe crash outcomes but designers or providers of elements of the system have a greater responsibility. This is a key message of change inherent to Safe System thinking.

GRSF capacity checklist 2 (see appendix A) was used to inform the below analysis.

3.2.1 REVIEW OF EXISTING PRACTICES

Safe roads and mobility fall under the mandate of the Public Works Department (PWD), since they are responsible for the planning and implementation of routine and periodic maintenance of the road infrastructure and the delivery of new (and upgraded) road assets. PWD is currently faced with the challenge of providing basic road access to 70 percent of all rural ni-Vanuatu by 2040, while at the same time maintaining the deteriorating road network in the urban areas. PWD is also coordinating the implementation of works to meet the ambitious GoV upgrade targets of existing roads which seek to seal all ‘core’ roads in urban areas by 2030 and in rural areas by 2040. The Vanuatu Public Roads Strategy (not yet approved) outlines the following characteristics of, and priority areas for improvement for, the Vanuatu road network:

- Urban arterial roads - sealed, busy and usually higher speed roads:
 - Poorly configured intersections (obstructed or poor sight lines); and
 - Road sections with high pedestrian traffic near activity centers such as schools, hospitals and markets.
- Other urban and town roads - these are or will be sealed roads, less busy with variable speeds:
 - Mix of local residential vehicle traffic, commercial vehicle traffic and pedestrian traffic generates safety risks;
 - Closely spaced and unclearly prioritized intersections;
 - Intersections with obstructed sight lines;
 - Closely spaced private driveways; and
 - Narrow streets adjacent to schools and other busy activity centers.
- Rural arterial (island ‘core’) roads - most of these are or will be sealed roads:
 - Poorly configured intersections (for example, acute angle) resulting in poor or obstructed sight lines;
 - Road sections with high pedestrian traffic near activity centers such as schools, hospitals and markets;
 - Tight curves on higher speed sections; and
 - Narrow culverts/crossings on higher speed sections.

Key aspects of the existing road network and the approach to roads and mobility in Vanuatu are discussed in detail below.

SAFE DESIGN PRINCIPLES AND ROAD STANDARDS

As road standards and maintenance are improved it is critical that the planning and design of roads in Vanuatu proceeds with road safety as a fundamental commitment through a structured application of simple safety measures. Currently, there are no formally adopted design standards, including geometric design standards and technical specifications, used for road design in Vanuatu. Rather, road design is undertaken on a case-by-case basis, dictated by provincial engineers, consultants or is donor-driven. The Vanuatu Resilient Roads Manual (PWD 2014), funded by the Australian Government, is a bespoke manual prepared to provide guidance to PWD on the low volume rural roads in Vanuatu based on accessibility, security and sustainability. This manual is based on the Austroads Road Design Series and serves as a comprehensive safety standard and rules for design of new roads and maintenance schemes in rural areas.

The limited speed enforcement in Vanuatu is adding pressure to PWD's maintenance schemes to slow vehicles down through road design interventions—mostly through the installation of speed humps. No targeted treatment programs (such as blackspot programs) are currently undertaken by PWD. This is attributed to constrained resourcing—personnel and funding—and lack of data to inform the programs.

Road Safety Audits (RSA) are not common practice in Vanuatu, with the first being funded by Australian Government Department of Foreign Affairs and Trade (DFAT) through the Roads for Development (R4D) program. Senior members of PWD are well-informed on the need for RSA at the design stage, during construction, and post-construction. PWD engineers are currently inexperienced in these areas.

PEDESTRIAN INFRASTRUCTURE

The design of the existing road network provides little segregation of pedestrians and vehicles. There is currently a limited number of footpaths, even in urban areas along key routes between residential areas and hospitals, schools, and so on, and at the main market in Port Vila. Where footpaths are provided—formal or informal—issues with drainage, especially after rain, make them unusable. There are no marked pedestrian crossings in Port Vila.

Most new projects in the land transport sector focus only on the trafficable part of roads, for instance, where vehicles travel. Seldom do they include footpaths, formalized crossings or other infrastructure to support pedestrians. This is attributed to funding constraints.

Given that over 40 percent of road crash fatalities annually are pedestrians, (World Bank 2020) this is a clear shortcoming in the planning and design of the road network. This lack of safe pedestrian infrastructure disproportionately affects children, women, poor, the working class and people-with-disabilities.

TRAFFIC CALMING

Speed limit signage is provided in urban areas and in some rural areas. Other regulatory, warning and advisory signage is scarce. As such, road user behaviors are largely at the discretion of road users, rather than managed by those that have responsibility to ensure safe operations, such as the PWD. It is noted that some improvements in safety signage (including bus stop signs) were implemented recently, however these have been delayed due to the Covid-19 pandemic.

Speed humps are currently present at some schools and other built-up areas.

3.2.2 RECOMMENDED NEW PRACTICES

There are several actions that could be taken to improve the infrastructure aspects of road safety in Vanuatu, through retrofitting programs on existing networks and the adoption of safety standards on new road projects. Road safety should be a central consideration for any investment in the improvement of roads and mobility. This is particularly paramount given the likelihood of increased speeds resulting from road improvements, and by association the increased crash risk which will be experienced.

It is recommended that safety standards be progressively introduced on any new road project planned by donors and GoV. PWD should agree on and adopt established applicable road design standards such as Austroads, which reflect good road safety practice. Outcome focused performance metrics, for example International Road Assessment Program (iRAP) star ratings, are also recommended to be progressively introduced. Road safety auditing at the design, construction and post-construction phases will be crucial to effectively track achievement of these standards and performance metrics. The Vanuatu Public Roads Policy (GoV 2019) guides investment programming, planning, and design with external development partners. It would be beneficial to have future iterations of this Policy include reference to specified standards that should be met with any public roads works and activities.

Legacy issues on the existing road network are a greater challenge that can be addressed through targeted maintenance interventions as capacity improves and budgets allow. Road safety improvements must be incorporated with the planned sealing of all 'core' roads (by 2030 for urban areas and by 2040 in rural areas). As part of this investment, there is a need to ensure safety related improvements are included as standard, including shoulder provision, footpaths, appropriate signs and line marking, traffic calming, and so on. As data collection, and consequently knowledge of problem areas, is improved, required treatments at specific locations will become easier to identify and outcomes on investment will be more effective. These treatments will be identified and designs will be developed through ongoing support from World Bank, Asian Development Bank, Japan International Cooperation Agency and DFAT, followed by implementation support within the relevant projects. These improvements should focus on physical traffic calming measures at locations with high pedestrian volumes (schools, markets, and so on), as well as the use of safety barriers on bridges and at bridge approaches. As part of maintenance activities, improved road signage, upgraded line marking and footpaths in busier pedestrian movement locations, should be delivered. Retrofitting programs should target:

- Pedestrian infrastructure; and
- Lower cost mass action safety treatments, such as small roundabouts, gateway treatments at villages, bridge end-post protection barrier treatments, treating poor visibility rural intersections and high-risk curves, and installation of barriers on hilly roads.

Assessment tools such as iRAP star ratings and road safety audits and inspections should be employed to assess the effectiveness of upgrade treatments, particularly to manage the increased risks through increased travel speeds associated with sealed roads. Capacity building in these assessment tools will be required for PWD and local engineering consultants.

The safe pedestrian infrastructure recommended above would include footpaths free of obstructions and accessible by children, pregnant women, elderly, and persons-with-disabilities. It also includes safe intersections and pedestrian crossings, such as the provision of raised pedestrian platforms, highly visible advanced warning signage, adequate street lighting, mid crossing refuges, and traffic calming for motorized vehicles. Other safe and inclusive infrastructure are tactile paving on sidewalks of high-volume transport corridors for the benefit of pedestrians who are blind, proper streetlighting, and proper public transport stops.

In the longer term, PWD should be resourced to implement a blackspot program that targets problem locations with evidence-based, cost-effective treatments. PWD engineers will require capacity building to identify appropriate interventions—a process which is beginning with this study. This will include activities such as minor infrastructure upgrade projects including roundabouts at higher risk intersections, mass action treatments, installation of pedestrian protection devices, and more. The R4D program are encouraged to identify ways to work with PWD to find opportunities to have a greater safety focus in their ongoing programs.

Bus infrastructure must accompany the bus public transport system. This will be particularly important as public transport demand and the number of buses on the road increases. This includes designated locations where buses are able to pull off the road to stop, as well as signposted bus stops with a safe area off the road for bus passengers to wait.

There would also be benefits in applying the Movement and Place framework (Figure 21) (or similar) over time to respond to the actual safety and flow conditions for transport, pedestrian and cycling activity in various environments plus some provision for access for persons-with-disabilities on any street or length of road. The framework matches road function (local streets up to motorways) with user groups and level-of-people activity to create better places for communities. The approach is an important and readily applied subset of Sustainable Mobility for All (Sum4All), as set out in the World Bank Global Roadmap of Action Toward Sustainable Mobility Report (2019). Road designers and system operators are being encouraged to apply the guidance when designing new or redesigning existing roads and streets, and when making decisions about how these roads and streets will operate. The integration of Safe System aligned road elements for walking and cycling into the Movement and Place Framework aims to eventually eliminate deaths and serious injuries to pedestrians and cyclists. An actual application of this framework is the construction of safe and accessible pedestrian facilities, such as sidewalks, footpaths and crossings throughout Port Vila.

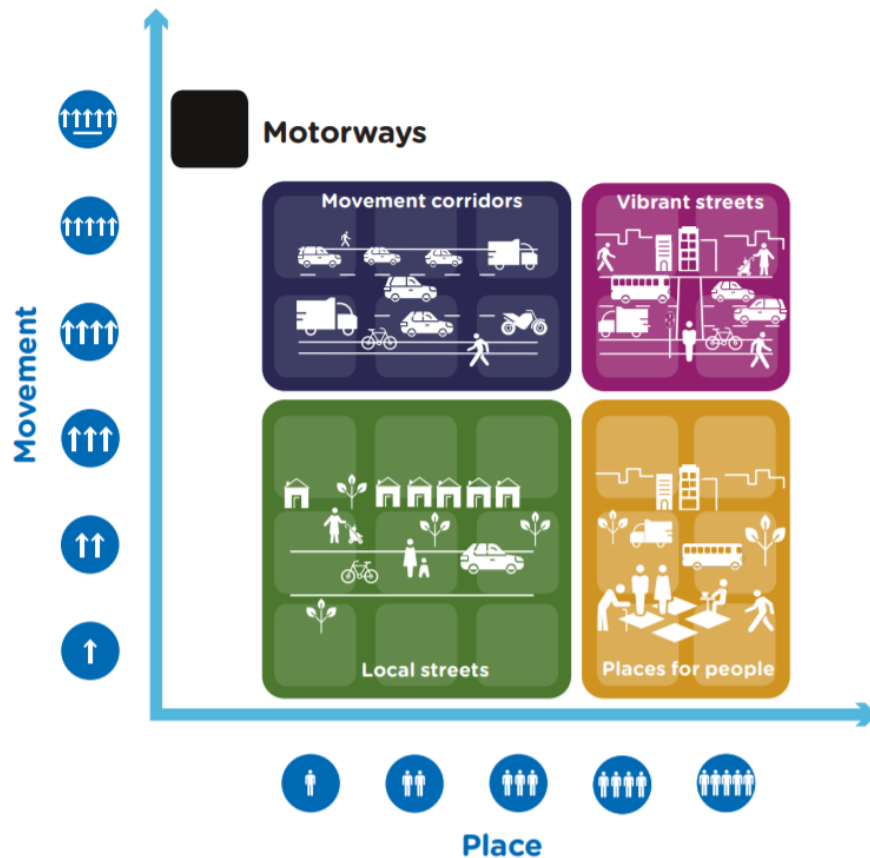


Figure 21: Movement and Place Framework (Transport for NSW 2018)

Development partners should strongly consider making elements of road safety improvement a condition of funding of road projects. In the meantime, until PWD’s road safety capacity increases, design consultants must be firmly encouraged to design with application of contemporary road safety principles. It is also noted that much of the donor funding directed to Vanuatu is for climate resilience. Elements of road safety are encouraged to be added to this scope.

3.3 SAFE VEHICLES

Safe vehicles avoid crashes or reduce crash outcome severity by protecting road users, including occupants, pedestrians and cyclists, in the event of a crash. Countries influence and control the safety standards (crashworthiness and roadworthiness) of the vehicles on their roads through:

- Importation safety requirements for crashworthiness standards and specific safety feature standards; and
- Roadworthiness standards for the operating condition of vehicles through vehicle inspection and annual registration procedures.

GRSF capacity checklist 3 (see appendix A) was used to inform the below analysis.

3.3.1 REVIEW OF EXISTING PRACTICES

There is currently no limitation on the maximum age of vehicles that can be imported into Vanuatu. Similarly, there are no regulations on the required safety features of imported vehicles. Vehicles are mostly imported to Vanuatu from Korea and Japan. The Customs and Inland Revenue Department (CIR) have begun to put some measures in place to control the vehicles that are imported, including the introduction of an Excise Tax to discourage import of reconditioned vehicles (anti-dumping strategy). This Excise Tax is in addition of the Import Duty and Value Added Tax that is imposed on all imported goods.

PWD requires annual vehicle inspections for vehicle registration renewal at checking stations throughout the provinces. At these inspections, PWD check vehicles against the requirements outlined in the Road Traffic Control Act (2006), particularly Article 32 Certificate of Road Worthiness and Article 33 Registration of Motor Vehicle. Vehicles can only be registered in Vanuatu if they are constructed so as to be steered from the left side of the vehicle.

The owner of every motor vehicle using a public road is required to pay an annual tax set out in Schedule 10 of the Road Traffic Control Act (2006) to the Director of CIR. A sticker is issued to all owners of vehicles deemed roadworthy and who have paid a fee and the tax, which must be displayed.

The Road Traffic Control Act (2006) also stipulates that if it appears to any police officer, that any motor vehicle is being driven in an unroadworthy condition they may require the driver thereof to submit it for examination within such period as they may specify in the form prescribed in Schedule Nine by an appointed person and any person who on being so required fails so to submit his said motor vehicle shall be guilty of an offence under this Act.

Figure 22 shows the vehicle inspection process.

Inspection Process

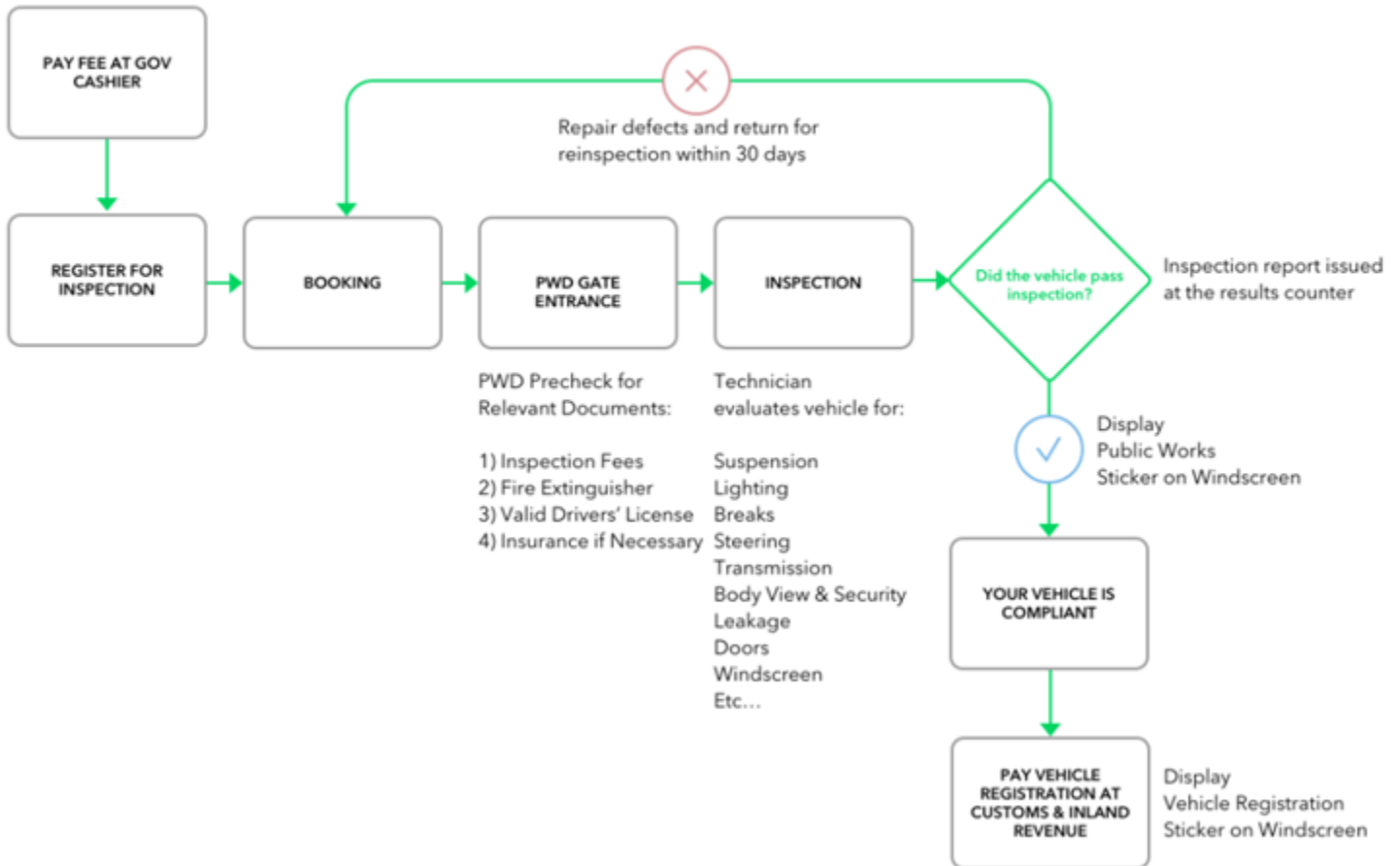


Figure 22: Vehicle inspection process (PWD 2021)

Public transport vehicles in Vanuatu consist of taxis, tour buses, buses and other forms of ‘common transport’ (flat-bed trucks). Typically, 15-seat vans act as public transport buses in urban areas and open trailer flat-bed trucks do so in the provinces. The vehicle inspection and registration process for public transport vehicles is as outlined above for private vehicles. The Public Land Transport Authority (PLTA) informed the review team that most public transport vehicles in Vanuatu are more than 10 years old with no seatbelts fitted. However, in 2018 GoV determined that the import of second-hand buses (mostly from Korea) would cease, and they would only import new buses (mostly from Thailand or Japan). There are currently approximately 2,000 buses in operation in Vanuatu.

A record of all vehicles imported to, and registered in, Vanuatu is kept by CIR. CIR advised that approximately 9,000 vehicles are registered in Vanuatu annually. Access to this data for other government ministries and the Vanuatu Police Force (VPF) is through written request to the Director of CIR. PLTA also keep records of public transport vehicles registered.

The number of registered motorcycles in Vanuatu is currently low—less than 200.

3.3.2 RECOMMENDED NEW PRACTICES

It is recommended that the maximum age of used light vehicles imported to Vanuatu be no more than eight years. This will require amendments to legislation and vehicle inspection processes, and it is recommended that the GoV also introduce regulations to require all new imported vehicles to meet United Nations Economic Commission for Europe (UNECE) vehicle safety regulations as well as a four-star crash rating by 2024. Evidence shows that vehicles that meet and exceed the requirements of the most important United Nations crashworthiness safety standards contribute substantially to the avoidance of road traffic crashes and to a reduction in the likelihood of serious injury in the event of a crash (WHO 2017). The seven international standards that are increasingly accepted as basic minimum standards for vehicle manufacture and assembly are included in Table 5.

For used light vehicle imports it is recommended that only vehicles less than eight years be permitted to be imported from 2022 and only vehicles meeting UNECE regulations (as well as the eight-year limit) would be permitted to be imported after 2027. The above changes to the Vanuatu vehicle fleet, for instance maximum vehicle importation age and safety feature requirements, are not expected to be step changes, rather transitional changes that may occur over time. The importation requirements, necessary checking and any administrative import requirements will come into effect following the amendments to legislation. Vehicles already in Vanuatu would remain in Vanuatu.

Table 5: Recommended United Nations safety standards to adopt

Regulation Number(s)	Related To	Description and importance
94, 95	Frontal and side impacts	Protects occupants and ensures that cars withstand the impacts of a frontal and side impact crash at certain speeds.
78	Motorcycle antilock braking systems	These devices prevent wheels from locking during braking. They help motorcyclists to maintain stability and steering control when braking hard by allowing the wheels to maintain traction with the road surface. Whilst there are currently low numbers of motorcycles present in the Vanuatu vehicle fleet, this remains an important safety feature for those that are present.
127	Pedestrian protection standards	Includes softer bumpers and modification to the front ends of vehicles (for example, removal of unnecessarily rigid structures) that reduce the severity of a pedestrian impact with a car. This is particularly important given the high risk associated with pedestrians being involved in crashes in Vanuatu.
140	Electronic stability control	Prevents skidding and loss of control in cases of oversteering or understeering. Single vehicle loss of control can be reduced substantially through the introduction of electronic stability control.
14, 16	Seat belts and anchorages	Ensures that seatbelts are fitted in vehicles during manufacture and assembly and that seatbelt anchorages can withstand the impact incurred during a crash.

The introduction of regulations for heavy vehicle and bus standards should also be prioritized. Associations under PLTA should work with GoV to agree safety standards for public transport vehicles. It is recommended that these include the mandatory installation of protective cages on the back of all flat-bed trucks carrying passengers. GoV should be procuring the safest possible public transport vehicles in terms of safety features that they can afford.

PWD should ensure that their vehicle roadworthiness inspections, that are requirements of annual vehicle registration, are effective and meet basic safety requirements for key safety features including the condition of tires, steering, brakes and

windscreen condition. It will be necessary for arrangements for robust testing of these features efficiently but comprehensively to be put in place and maintained. Data on the quality and safety of the current vehicle fleet should also be stored and organized to enable analysis and evaluation.

3.4 SAFE ROAD USERS

Road users consist of pedestrians, cyclists, public transport users and vehicle drivers (commercial and private). Safe road users are alert, unimpaired, aware of and comply with road rules. Many countries underestimate both the effectiveness and potential benefits of countermeasures targeting road user behavior. It should be noted however, that valuable resources can be wasted on ineffective interventions targeting road user behavior, such as campaigns that are not strongly linked to particular enforcement efforts and school education programs that seek to provide general road safety knowledge rather than skills development. The GRSF Guide for Road Safety Interventions: Evidence of What Works and What Does Not Work (Turner, Job and Mitra 2020) is a useful reference document (focused on low- and middle-income countries) for effective evidence-based solutions, noting that not all road safety interventions are equally effective and that what appear to be ‘common-sense’ approaches to selecting road safety interventions will often not be the best. Well-planned and resourced enforcement, however, which deters illegal and unsafe behaviors is highly effective.

GRSF capacity checklist 4 (see appendix A) was used to inform the below analysis.

3.4.1 REVIEW OF EXISTING PRACTICES

In general, road user awareness of road rules and safe practices across key user types—such as pedestrians and drivers—is low in Vanuatu. Details on the existing practices of vehicle drivers, public transport, road safety education and traffic law enforcement are provided below.

VEHICLE DRIVERS

Road safety is inherently connected to the standard of vehicle driver training, testing and licensing. The minimum age for obtaining a license for each license category is:

- 14 for motorcycle riders (less than 50cc);
- 16 for motorcycle riders (50cc–125cc);
- 18 for motorcycle riders (more than 125cc);
- 18 for private motor vehicle drivers (cars, 2WD and 4WD (double chain) trucks);
- 21 for heavy motor vehicle drivers (carrying capacity exceeding 3 tonnes); and
- 21 for common vehicle drivers (public transport vehicles).

Before obtaining a driver’s license, an individual must first hold a learner’s license. The process for obtaining a learner’s license includes two application forms (learner’s license form and driver’s license form) completed by the individual and issued to CIR with a fee payment of VT1,500 and an accompanying medical certificate. The medical certificate must be completed by a person associated with a medical profession or institution, such as a private doctor, public hospital, or local dispensary. The learner’s license is valid for one year from the date of issue. Within this period applicants can undertake their test of competence examination at a police station to get a driver’s license. There are no associated requirements for the minimum number of hours to be logged, or requirements for night driving experience prior to undergoing the practical

testing, and ultimately being issued with a full driver's license. If an applicant fails the test or does not feel confident to drive at the end of the one-year learner's license validity period, the applicant can renew the license the following year, with additional payment of the fee. Applicants who pass the test of competence examination are then eligible for their driver's license which is issued by CIR.

The renewing of licenses again requires approvals from multiple offices (VPF and CIR). An individual wishing to obtain their heavy vehicle driver's license is required to firstly have their private motor vehicle driver's license and have driving experience of at least three years. Similarly, for common vehicle driver's licenses a private motor vehicle driver's license must be held before this license class can be applied for.

Feedback from stakeholders also indicated that in general, comprehension of road signage, where present, is lacking.

PUBLIC TRANSPORT

In addition to the licensing requirements outlined above, individuals who intend to drive common transport vehicles, including for tourist land transport, must apply for a driver's permit from a PLTA Permit Officer. In order to meet the requirements of the Land Transport Act (2015), all drivers operating in the tourism sector require medical reports from Vila Central Hospital or another government-owned medical facility. Driver offence data is not integrated with the issuance of driver's permits, and PLTA rarely refuse driver's permit applications.

Public transport drivers are associated with poor behaviors in Vanuatu, with a number of road crashes and fatalities attributed to public transport vehicles, particularly pedestrian fatalities. PLTA speculate that the high frequency involvement of public transport in road crashes is largely due to inadequate driver licensing schemes (no driving school and no basic theory or general road rules testing). PLTA have previously worked with the Department of Tourism to run driver training sessions, focusing mainly on drink driving, however these programs are no longer occurring. Drink driving is considered an issue amongst public transport drivers (and GRSF data reflects the high percentage of alcohol-related road crashes) (World Bank 2020).

While to some extent unsafe behavior can be attributed to some individual drivers, the current revenue-based operational model forces public transport drivers to compete for passengers since a driver's income depends directly on the number of passengers they can transport. This leads to unpredictable movement and behaviors on the road. This unsafe behavior is characterized by frequent acceleration and stops, long idle times, and excessive overtaking and lane changing to compete for passengers. The current operational model of public transport combined with socio-economic factors also push drivers to driving without sleep or fatigue which reduce the likelihood that they remain alert and safe on the road. PLTA have difficulty managing the current operations, given all public transport services are privately owned and there are no designated routes.

A large amount of public transport operates illegally, for instance without valid driver permits or vehicle permits. Enforcement is lacking in this area. This is of particular concern given that anecdotally, public transport makes up a large portion of the transport mode share in Vanuatu, especially for school children. This is predominantly due to the high cost associated with owning a private vehicle.

Facing a greater risk are users of flatbed or open-trailer trucks which is the most common public transport in rural areas. The consequences of a vehicle carrying several unrestrained passengers with no vehicle body protecting them being involved in a road crash are substantial.

ROAD SAFETY EDUCATION

Lack of awareness of road rules and general safe road user behavior among vehicle drivers and pedestrians is an issue in Vanuatu. This is of particular concern for pedestrian safety, which was flagged as a key road safety issue by the stakeholders and is confirmed through the GRSF country profile data included in section one and appendix D of this report.

There are some basic road safety programs incorporated within the Vanuatu school curriculum that supports some essential road safety learning, such as concepts regarding how and where to safely cross the road. Further, some schools request that VPF give presentations to their students on an ad-hoc basis. General public awareness activity is present in Vanuatu in the form of VPF presentations on various topics, including road safety, on the radio on Friday evenings. However, deterrence campaigns are not currently a GoV focus.

There is helmet wearing legislation for motorcyclists in Vanuatu. If the number of motorcycles on the road network increases, it is imperative that this is adequately enforced.

TRAFFIC LAW ENFORCEMENT

VPF has several resourcing constraints both in terms of equipment and staffing. These constraints are limiting the extent of road safety enforcement and its effectiveness. Further, the current legislative arrangements that enable VPF to carry out enforcement tasks are not conducive to a robust traffic law enforcement operation. There is currently no legislation for VPF to use speed radar or laser equipment to enforce the speed limits stipulated in Section 15 of the Road Traffic Control Act (GoV 2006) or alcohol breathalyzers to enforce Section 16 of the same Act, which states that it is an “offence for any person to drive on the public road when under the influence of alcoholic liquor or a drug to such an extent that the driver is incapable of properly controlling his vehicle.” Critically, the legislation does not specify a measurable definition of intoxication or blood alcohol concentration (BAC) limit that would objectively identify when people are incapable of properly controlling the vehicle. Drink driving has been identified as a critical issue in Vanuatu and is likely a large contributor to the high proportion of pedestrian deaths (as a result of both intoxicated drivers and intoxicated pedestrians). It is understood however, that a BAC of 0.03 is advancing for discussion in Parliament in the coming months. Further, the Road Traffic Control Act (GoV 2006) requires no restraint of drivers or rear seat passengers of vehicles in Vanuatu through seatbelts nor use of child restraints for young children.

The current infringement system provides inadequate and delayed access to licensing and registration records for VPF and PLTA, hampering enforcement at the roadside. Ineffective linkage between these records and offence records compromises the potential for identifying repeat offenders and establishing effective demerit point systems. It is noted that a new web-based system is under development by CIR to improve data access by early 2022.

The Vanuatu Police Training College does not include any traffic-specific training for VPF cadets.

3.4.2 RECOMMENDED NEW PRACTICES

VEHICLE DRIVERS

The adoption of expanded learner arrangements for novice drivers in Vanuatu is recommended in the next ten years. Limitations should also be introduced that are in place for a three-year period after achieving solo licensing. Limitations could include a passenger restriction of one peer aged passenger with all other passengers who are either immediate family

or fully licensed drivers, and a zero BAC limit for novice drivers. In the learner period, drivers from 16 years of age should obtain their learner permit and then complete 60 hours of supervised driving practice under the supervision of a fully licensed driver. The learner driver should fill out a logbook which is countersigned by the supervisor after each practice session and has to be presented to the testing officer at VPF before sitting for the practical driving test to be taken after reaching a minimum age of 18 years. This responds to international knowledge that it is critical for learners to develop experience in real traffic conditions in order to reduce their crash risk. This learner driver approach would be part of a potential graduated licensing system (GLS), which seeks to progressively match increased risk on the roads to the increased driving experience young drivers have achieved. An outline of the GLS in place in New South Wales, Australia, is shown in Figure 23.



Figure 23: Graduated Licensing System in place in New South Wales, Australia (TfNSW n.d)

ROAD SAFETY EDUCATION

Lack of awareness of road rules and safe road practices needs to be addressed in parallel to infrastructure upgrades in Vanuatu. Road safety education in schools should focus on where and how to safely cross a road, as well as safety relating to bicycle riding, including to guidance to never ride without a helmet and to avoid the roads where there are no footpaths available. This education should be practical, not theoretical, for instance taught on actual roads, to appropriate age groups. Evidence shows that this is a more effective way to encourage behavior change. The Ministry of Education and Training have indicated that they see the value of this type of program being incorporated more broadly into the school curriculum. This program of basic practical road safety training should be delivered by school teachers who understand the learning needs of their students and are trained to do this.

Measures to be pursued within the general community will also require attention and this should be driven by the National Road Safety Committee and led by municipal wardens. Municipal wardens have sufficient community influence to be effective in delivering this type of education, following appropriate training. Campaigns should aim to:

- Inform of the risks and consequences of unsafe road behavior;
- Provide education on the road rules and how to safely use the road as all user types;
- Deter drink driving through reporting on numbers of drivers screened and offences detected;
- Deter speeding through reporting on numbers of random breath tests (RBT) and offences detected; and
- Inform of the benefits of seatbelts, child restraints and helmets.

Carefully scoped communication to the community can be effective in advancing the acceptability of proposed change including political support. This is especially the situation where increases in deterrence of illegal behaviors through new legislation and regulation and expanded scope and intensity of enforcement operations are contemplated.

PUBLIC TRANSPORT

Regulatory frameworks should be established to allow PLTA greater control over public transport driver behavior. As drink driving enforcement is increased by VPF through supporting legislative amendments, mandatory alcohol testing of public transport drivers should be introduced. Driver and vehicle permit renewal would depend on a driver retaining his or her license at the time of renewal but they could then also be subject to not having received, for example, more than one minor (less than 0.08 percent BAC) drink driving infringement over the previous three years. Similarly, as speed enforcement is increased by VPF, driver and vehicle permits could be subject to no more than three speed infringements per year. Variations based on this approach should be considered.

Mandatory seat belt wearing on public transport (where they are fitted) is also strongly recommended, as well as the implementation of maximum speed limits for public transport vehicles. Speed limiters can potentially be investigated (in terms of legislative compliance arrangements) in the near future as a mandatory vehicle measure for all flat-bed trucks being used as public transport vehicles.

Strong consideration for revised public transport operations is also recommended in Vanuatu. These reforms should focus on public transport operations and should aim to reduce economic incentives to speed and to eliminate dangerous on-street competition as well as other unsafe behaviors. PLTA, working together with the bus operators, can experiment with various legal and institutional structures that could establish public transport companies, set fixed public transport routes and stops, standardize wages for public transport drivers, and set driving and vehicle safety standards. An example is implementing a service contracting scheme where a government body will pay operators and drivers a service fee to operate routes, provided

they meet certain performance and safety standards. These arrangements, while representing a substantial change from current operations, may simplify the management task for PLTA. In other Pacific Island Countries trials using GPS are being conducted of speed monitoring for speed limit compliance by buses by government transport authorities. Improved speed limit signage would enable enforcement for compliance, including application of technology of this nature, to be implemented effectively. It is important that a recognized road safety risk is addressed.

TRAFFIC LAW ENFORCEMENT

Traffic law enforcement targets adequate enforcement of road laws and rules to achieve good compliance levels by road users and seeks to strengthen legislation. Enforcement is crucial due to the optimism bias of road users that exists, whereby the fear of a penalty is more effective than the fear of dying, because most drivers consider that they have better than average driving capabilities. The resourcing constraints on VPF are acknowledged and a tactical plan and additional resourcing from GoV is required.

The current legislative system supporting traffic law enforcement requires review. Existing links with the Australian Federal Police (AFP) should be leveraged to support this, as much as can be negotiated, as well as the development and implementation of the recommended actions described below.

A legislative requirement for wearing of seatbelts in the rear of vehicles where belts are fitted (updated vehicle import regulations should require seat belts fitted for all seats) and enforcement of this legislation, plus legislation requiring fitting and wearing of child restraints for young children should be introduced and then robustly enforced.

Speed compliance should be a priority of the VPF Traffic Unit, particularly as it becomes a substantially larger risk as a result of increased investment in road surface upgrades. The allowance for the use of speed radar equipment should be updated in legislation in the medium-term to allow for introduction of speed enforcement.

As VPF have advised, an increased focus on drink driving is needed in Vanuatu. This can be enabled through legislating a BAC limit, establishing a penalty regime and supporting the enforcement task through appropriate resourcing of VPF and the purchase of necessary equipment. The legal BAC limit for heavy vehicle drivers, public transport vehicle drivers and novice drivers in their first three years of drivers should be set at 0.00 percent. For all other drivers, the BAC limit should be set to 0.03 percent (as is currently being recommended in draft legislation being prepared). These BAC limits align with international standard practice. Once legislation is in place, it is recommended that drink driving enforcement be progressively introduced through RBT. Community education initiatives need to accompany the introduction of a BAC limit, particularly focusing on what it means for people's consumption of alcohol. Starting to encourage separation of drinking and driving now will assist with bringing the community on the journey to that required behavior when the new limit is introduced, ensuring they are informed of the required behavior change to avoid penalties. Beyond this, the health system should be resourced to implement blood sampling to detect alcohol levels above legal limits for drivers in all fatal and serious injury crashes, supported through legislative arrangements.

General steps to establish speed and drink driving enforcement programs when the new BAC limits are legislated would include:

- GoV to agree and implement an enforcement program
- Legislate and regulate for use of specific equipment
- Procure speed guns/breathalyzers
- Train VPF (initially and ongoing in police internal training college activities) in the use of equipment and tactical operational planning and programming¹
- Ensure adequate administrative processing and follow up of payment of infringements/ court fines are established

- Conduct campaigns to warn public of police enforcement efforts and legislated penalties applying to support deterrence of speeding and drink driving
- Report on levels of vehicles screened and offences detected on a quarterly basis
- Review the first 12 months of implementation.

Increased roadside checking for unlicensed drivers could be carried out in association with an RBT regime.

Training programs to train traffic police in the use of enforcement equipment and tactical operational planning and programming, as well as in road crash investigation is also necessary. It is recommended that the Vanuatu Police Training College consider expanding its curriculum to include elements of these.

3.5 POST-CRASH CARE

3.5.1 REVIEW OF EXISTING PRACTICES

Together with the Ministry of Health (MoH), the ambulance services operators within Vanuatu are responsible for care and retrieval of crash victims from the roadside to post-crash emergency treatment. Post-crash care is currently limited by the number of ambulances with appropriate equipment, availability of trained paramedics and treatment facilities throughout Vanuatu.

GRSF capacity checklist five (see appendix A) was used to inform the below analysis.

PRE-HOSPITAL

In Vanuatu, post-crash emergency response is delivered through the different health facilities: hospitals (main and provincial), health centers, dispensaries and community aid posts (Figure 24). Emergency care for serious injuries in the provinces are transferred to Vila Central Hospital. These transfers are based on a remote assessment undertaken by Vila Central Hospital and transportation to the Efate is typically by a chartered medevac flight. This assessment can be influenced by cultural and social pressures.

Designated ambulances are only present on Efate and Santo, through both government-operated and privately-operated ambulance services. Government-operated ambulances function in association the main hospitals in Efate and Santo, Vila Central Hospital and Northern Provincial Hospital, respectively. The drivers of these services have limited medical training—extending as far as basic first aid training—however anecdotal evidence suggests they are hesitant to perform first aid to patients. Rather, their role is to drive the crash victims to health facilities. ProMedical Vanuatu is a subscription-based ambulance service that serves to augment the government-operated services on Efate and Santo, providing patient care and equipment of international standards. An individual subscription to the ProMedical service costs approximately VT3,000 for ni-Vanuatu and VT6,000 for expatriates. Family and workplace subscriptions are also available. Whilst the standard of this service is high standard, the prices are not accessible for the average citizen, more catering to tourists and expatriates. This has led to inequalities in pre-hospital emergency care on Efate and Santo. This is a particular issue since anecdotal evidence from MoH staff indicates that road crashes have a disproportionate impact on the local community, affecting more of the poorer sectors of society, especially public transport users. However, the ProMedical service does appear to value education and capacity building and is currently training seven ni-Vanuatu student paramedics. On other islands, communities rely upon the flat-bed trucks commonly used as public transport to transport crash victims to health facilities.

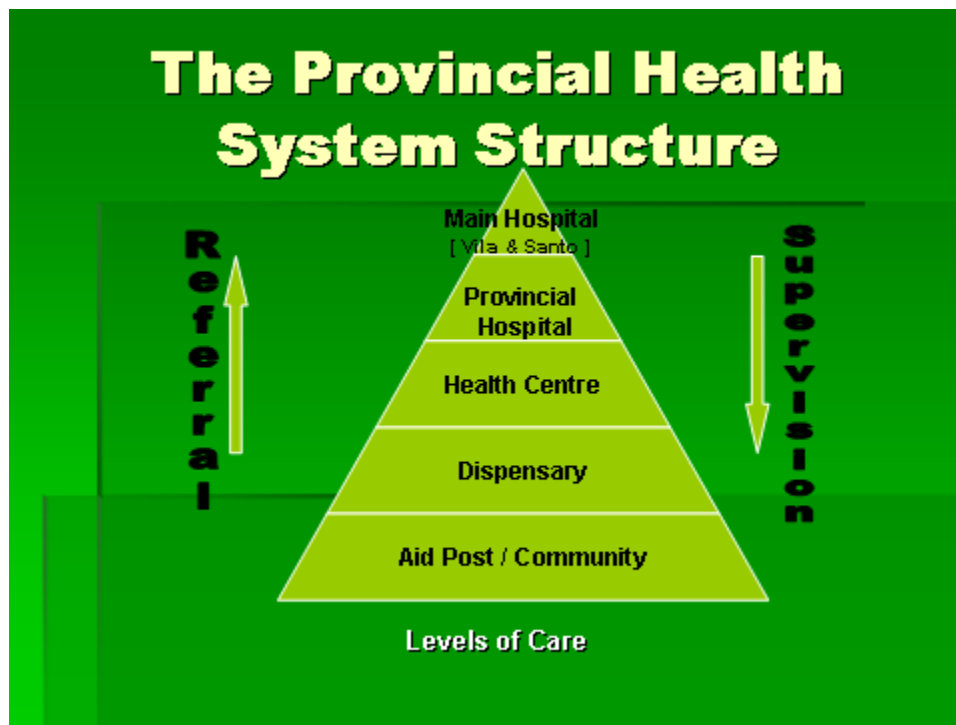


Figure 24: Provincial Health System Structure

HOSPITAL AND REHABILITATION

The different health facilities discussed above are operated by a range of different organizations, including government, the church and nongovernmental organizations and they each provide varying levels of available care. Triage arrangements on arrival to hospitals are underdeveloped, particularly due to resourcing constraints on the already limited medically trained hospital staff. Vila Main Hospital have recently established a triage desk in the waiting room to better collect health data, including those arriving at hospital as a result of road crash injuries. Prior to this, manual logbook records were completed by time-poor doctors and nurses in the ward which were then often filed inconsistently making it difficult to retrieve files and records relating to road safety injuries and fatalities.

There is a system of certifying deaths in the community but is only recorded when a fatality is brought to hospital. Coordination mechanisms between MoH and VPF were previously not clear but have since been established for the Covid-19 pandemic response.

A physiotherapy department for rehabilitation and long-term care for those injured in road crashes is located in Port Vila. Capacity does not extend so far as to offer prosthesis or occupational therapy support (currently an unfilled position). MoH indicated a shortage of wheelchairs and walking frames also constrains the long-term care arrangements. Lack of resources force doctors to source fund raising on their own, including through sausage sizzles.

3.5.2 RECOMMENDED NEW PRACTICES

PRE-HOSPITAL

As roads are being developed and subsequently more crashes occur, ambulance coverage (including airplanes) should be expanded. This is an essential service and improvement of this service should continue to be supported by GoV. The allocation of resources is essential to provide further training for local health staff as paramedics. These trained local paramedic resources should be made available to all ni-Vanuatu through the government-operated ambulance service, and this service expanded to other islands in addition to Efate and Santo. The use of data will be important to sensibly plan the coverage of an expanded ambulance and paramedic service. A recommended approach would be to start measuring response times from time of incident to arrival of first trained responder. This would help with the future resource planning and could also be used as a safety performance indicator.

HOSPITAL AND REHABILITATION

Dedicated attention to the strengthening of the health system is vital. Provincial health clinics should be equipped to attend to crash injuries so that post-crash care will be accessible in each province. In the main hospitals, efforts should be made to both transfer the large number of outpatients who remain in hospital to community-based clinics and consolidate the triage system currently being developed and implemented.

Hospital-based surveillance of road crash injuries and subsequent follow up on disability will help estimate the long-term impact of road traffic crashes. The sourcing of a resource to fill the occupational therapist role in time is indicative of a number of necessary initiatives that will improve the long-term rehabilitative support available to road crash victims.

3.6 SAFE SPEEDS

3.6.1 REVIEW OF EXISTING PRACTICES

The speed limit in urban areas is 40 km/h and the speed limit in rural areas is 60 km/h. The condition of the road, particularly in rural areas, dictates the speed of drivers more so than the design speed of 60 km/h. Speed limit signage is present on urban roads and limited on rural roads in Vanuatu. As discussed in section 3.4 of this report, enforcement of speed is not occurring on any broad scale.

Speed humps are being installed outside schools and other highly pedestrianized areas. There is currently no general policy that determines whether a speed hump is installed by PWD, rather it is a case-by-case process. Anecdotal evidence suggests that the community desire more speed humps (preferably speed platforms to enable buses and heavy vehicles to traverse them without major inconvenience while effectively requiring these vehicles to slow down to a safe speed (<30 km/h or less) at those locations). This is particularly urgent given the absence of targeted speed limit enforcement and the likelihood that even in the longer term, enforcement will not be able to be everywhere.

3.6.2 RECOMMENDED NEW PRACTICES

Safe travel speeds should reflect the application of safe system principles about infrastructure safety in combination with the safety features of vehicles using that section of road to avoid fatal crash outcomes in the event of a crash. The theoretical function that may be desired for a road section must not outweigh what a safe speed, based on safe system principles, should be. Following the agreement regarding speed limits for the road network, it is recommended that speed limit signage is installed in rural areas and the public are educated in their meaning. These speeds then need to be enforced. Time-based speed limits around schools could be installed in the longer-term. For the hours of typical arrival and departure of students from schools a speed limit of 30 km/h is considered international good practice.

In the longer term, PWD will require resources within their maintenance budget to install speed platforms at additional locations where lower speeds are required in higher activity pedestrian areas such as markets, hospitals, places of worship, schools and public transport stops.

As discussed in section 3.4 of this report, in the long-term, public bus speed limit compliance needs to be actively monitored and enforced, with continued operation to be subject, for example, to no more than three speed infringements per bus per year, and altered incentives to be identified to avoid systemic encouragement of speeding and unsafe overtaking.

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¹ Between the initial consultations and the drafting of this RSMCA report, VPF have requested training in the use of speed laser radar and alcohol breathalyzers, as well as their evidence base for prosecution from the AFP.

4. NEXT STEPS

The following sections outline suggested next steps in terms of setting a national road safety vision and strategic direction, and priority activities for Vanuatu relating to road safety. The activities plan should demonstrate the Government of Vanuatu's (GoV) commitment to improving road safety outcomes and embrace the Safe System Approach. It will set out the practical steps, strategic interventions and commitment to a road safety management system that will build towards the realization of the road safety vision and strategic direction to be set by GoV.

4.1 VISION FOR ROAD SAFETY

The development of a national vision for road safety in Vanuatu is critical to ground the planning and delivery of road safety progress. The vision sets the goal for road safety aspiration in Vanuatu.

The recommended road safety vision for Vanuatu by 2025 is for the implementation of required road safety management arrangements and regulatory frameworks, on the journey towards the elimination of road crash fatalities and serious injuries.

4.2 TARGETS

Applying targets to the road safety effort in Vanuatu will help to maintain casualty reduction as a policy priority, show the commitment to road safety of GoV to the community, encourage community understanding of the road safety challenge and promote necessary behavior change, motivate GoV to deliver road safety improvements, and generate demand for data collection for forecasting and monitoring purposes. All of these elements will ultimately lead to better road safety outcomes in Vanuatu.

Road safety targets should be both vision-based, as well as empirically derived from crash data. The United Nations General Assembly adopted a resolution on road safety in September 2020 that endorsed the forward-looking Stockholm Declaration, calling for a new global target to reduce road traffic deaths and injuries by 50 percent by 2030 on the way to Vision Zero by 2050. It invites strengthened efforts on activities in all pillars of the Global Plan for the Decade of Action and an accelerated shift to safe, affordable, accessible, and sustainable modes of transport like walking, cycling and public transit.

GoV will be in a position develop road safety targets subsequent to establishing road safety management arrangements and relevant regulatory frameworks.

4.3 PRIORITY ACTIVITIES AND DEVELOPMENT OF A STRATEGY

A list of specific priority activities is included in the tables below with three recommended implementation period timings:

- Period A: 2021–2023
- Period B: 2024–2026
- Period C: 2027–2030.

The financing needs column represents the approximate total financing needs for each action and is categorized as Low (< US\$50,000), Medium (US\$50,000-US\$150,000) and High (> US\$150,000).

4.3.1 PRIORITY ACTIVITIES FOR PERIOD A: 2021-2023

During 2021-2023, it is proposed for Vanuatu to commence and implement ten institutional management priority activities, and six Safe System intervention priority activities. These are outlined in Table 6 and Table 7.

For this initial period, it is recommended that some essential enabling priority activities are identified, agreed and implemented by GoV. These activities are limited in recognition of the substantial knowledge development period ahead for all ministries, as well as current resourcing constraints. The training and knowledge development program for GoV road safety related personnel needs to be substantial and adequately resourced to ensure it takes place and achieves critical mass in terms of spreading technical knowledge. The activities proposed for Period A (2021–2023) are not considered as an action plan, as acquisition of experience and development of organizational and management arrangements will be necessary before this can meaningfully occur. It is intended that these suggested activities are achievable with current resources and knowledge, provided there is ongoing support from donor partners. Only with the development of an informed group of GoV officers in key ministries who are focused on strengthening institutional functions, enabling actions and final interventions, can the achievement of meaningful and sustainable road safety progress occur.

Table 6: Institutional management priority activities for implementation period 2021-2023

#	Institutional management function	Activity	Proposed Responsible Organization(s)	Financing Needs
A1	Results focus and coordination	Agree which organization will take on the lead agency function.	GoV	Low
A2		Form a Working Group of relevant senior managers with an agreed Terms of Reference (TOR) to make road safety recommendations.	Lead agency	Low
A3		Form a National Road Safety Committee (NRSC) (Executive Group) with an agreed TOR to make decisions on road safety recommendations.	Lead agency	Low
A4		Adopt a basic road safety activity plan for the period 2021- 2023.	NRSC	Medium
A5		Develop, resource and implement an initial program for comprehensive training (knowledge and skills) and briefing of road safety and other staff in all relevant	NRSC	High

		ministries, including training of private sector engineering consultants.		
A6	Legislation	Review and remove obstructing barriers to the adoption of the proposed Land Transport Bills to allow for their acceptance and passage into legislation as soon as possible.	CIR, MJCS	Medium
A7	Funding and resource allocation	Establish a dedicated road safety position in the Public Works Department (PWD) and resource the Vanuatu Police Force (VPF) to adequately undertake the enforcement task.	PWD, VPF, DOFT	High
A8		Seek to include in departmental (PWD, VPF, Public Land Transport Authority (PLTA), Ministry of Health (MoH)) budgets a line item for road safety activities. For VPF and MoH this will be enhanced from what is already budgeted. For PWD and PLTA this will be a new line item.	DOFT	High
A9	Monitoring and evaluation	Collate all available police road crash data and health data over the last five years, with a view to analysis to give an indication of the spatial nature of road crashes in that period.	PWD, VPF, MOH	Low
A10		Conduct an in-depth data assessment to identify gaps in road safety data collection and develop technical and institutional recommendations to achieve better data. (Note: Global Road Safety Facility (GRSF) are preparing guidelines on data assessment in association with the International Transport Forum (ITF) that could be drawn upon for this activity.)	PWD, VPF	Medium
A11	Research and Development and Knowledge Transfer	Join the Asia Pacific Road Safety Observatory (APRSO) as an active member country	GoV	Low

Table 7: Safe System interventions priority activities for implementation period 2021-2023

#	Safe System intervention pillar	Activity	Proposed Responsible Organization(s)	Financing Needs
A12	Safe roads and mobility	Train PWD and (and private consultants) in assessing and designing road safety treatments. Implement progressively in externally funded projects and as local maintenance funds permit.	NRSC	High
A13	Safe road users	Legislate to enable use of speed guns for speed enforcement by VPF, procure adequate speed guns and train VPF to task speed compliance operations to alter non-compliant driver behaviors.	NRSC, VPF, MJCS, SLO	Medium
A14		Legislate to limit the blood alcohol concentration (BAC) level for vehicle drivers.	PWD, MJCS	Low
A15		Train municipal wardens to use their community influence to deliver road safety awareness education that aims to:	NRSC, Municipalities	Low

		<ul style="list-style-type: none"> • Inform of the risks and consequences of unsafe road behavior; • Provide education on the road rules and how to safely use the road as all user types; • Deter drink driving through reporting on numbers of drivers screened and offences detected; • Deter speeding; and • Inform of the benefits of seatbelts, child restraints and helmets. 		
A16	Safe speeds	Install speed limit signage in accordance with legislation on both urban and rural roads.	PWD	Medium
A17		Resource the progressive installation of pavement platforms where lower speeds are required in higher pedestrian areas.	DOFT, PWD	Medium

4.3.2 PRIORITY ACTIVITIES FOR PERIOD B: 2024-2026

During 2024-2026, it is proposed to commence and implement eight institutional management priority activities, and 11 Safe System intervention priority activities. During this period, some more complex intervention priority activities are implemented, utilizing the increased institutional management capacity developed in the period 2021-2023. This is outlined in Table 8 and Table 9 below.

For Period B (short-term, 2024–2026 years) a strategy and action plan could be prepared based on knowledge acquired in the first few years of road safety establishment and implementation. Some further strides should be made in this period to develop the road safety management arrangements, regulatory framework and interventions employed.

Table 8: Implementation period 2024-2026 priority activities for institutional management functions

#	Institutional management function	Action	Proposed Responsible Organization(s)	Financing Needs
B1	Results focus and coordination	Adopt a road safety strategy to 2030, incorporating learnings from activities implemented in 2021-2023	NRSC	Low, but outcomes likely to be high costs
B2		Adopt a three-year action plan from 2024 to 2026 to reflect adopted strategy.	NRSC	Low
B3		Form an advisory group with an agreed TOR to provide input to the working group and executive group.	NRSC	Low
B4	Legislation	Review the Road Traffic Control Act and amend where required—focusing particularly on elements dictating road user behavior and deterrence activities.	PWD, VPF, SLO, MJCS	Medium
B5	Funding and resource allocation	Develop awareness within ministries and at Cabinet level that:	NRSC	High

		<ul style="list-style-type: none"> Selected measures do exist which if implemented will reduce fatalities and serious injuries and deliver net economic benefits to Vanuatu; Capacity to identify investment opportunities and policy advice requires recurrent resourcing for road safety positions within ministries; Investment programs require both an ongoing capital program (for example for infrastructure safety) and recurrent funding for ongoing operating programs (for example, enforcement of road laws and rules); and Strong business cases for relevant investments, based on estimates of the effects of evidence-based measures on road fatalities and serious injuries, compared to implementation costs, are required for NRSC, Ministerial Council and Cabinet consideration. 		
B6		Examine the development of a feasible injury insurance premium-related road safety fund	NRSC	Low
B7	Promotion	Promote improved road safety management arrangements and those interventions with a high benefit to cost impact to ministers and cabinet.	NRSC	Low
B8	Research and development and knowledge transfer	Implement a road crash investigation training program for VPF.	NRSC	Medium

Table 9: Implementation period 2024-2026 priority activities for Safe System interventions

#	Safe System intervention pillar	Action	Proposed Responsible Organization(s)	Financing Needs
B9	Safe roads and mobility	Train PWD in skills to develop a costed evidence-based blackspot treatment program, as well as safety assessment tools (International Road Assessment Program (iRAP), Road Safety Audits (RSA), SSA, and so on).	NRSC	Medium
B10		Begin to implement mass action treatments including installation of small roundabouts, gateway treatments at villages, other speed management treatments, bridge-end protection barrier treatments, poor visibility at rural intersection treatments, off through road carriageway bus stops and signage and pedestrian protection facilities, high-risk curve treatments, and more.	PWD	Medium
B11		Begin to implement an annual blackspot treatment program, reflecting safe system principles and including: <ul style="list-style-type: none"> Roundabouts at higher risk intersections Intersection safety treatments Tight rural road curve treatments 	PWD	Medium

		<ul style="list-style-type: none"> Barrier installation to shield particularly hazardous lengths of roadside objects where higher numbers of run off road fatal and serious injury crashes have occurred More substantial pedestrian safety facilities. 		
B12	Safe vehicles	Legislate to limit the maximum age of used vehicles imported to Vanuatu to no more than eight years and support with appropriate vehicle inspection processes for imports.	PWD, MJCS	Low
B13		<p>Legislate to introduce regulations to require all imported new vehicles to meet United Nations Economic Commission for Europe (UNECE) vehicle safety regulations including:</p> <ul style="list-style-type: none"> 94, 95 – for frontal and side impacts 78 – for motorcycle antilock braking systems 127 – for pedestrian protection standards 140 – for electronic stability control 14 and 16 – for seat belts and anchorages for all seats. <p>All new vehicles imported from this time period should also have a minimum four-star crash rating.</p>	PWD, MJCS	Low
B14	Safe road users	Introduce seat belt wearing legislation requiring belts to be worn in all seats including rear seats where belts are fitted in existing vehicles.	PWD, MJCS	Low
B15		Introduce legislation requiring child restraint use for young children.	PWD, MJCS	Low
B16		Review bus operations to identify measures to reduce economic incentives to speed and unsafe overtaking	PLTA	Low
B17	Post-crash care	Expand emergency ambulance care to reduce retrieval times, including increasing the number of trained paramedics.	MoH	Medium
B18		Train VPF in tactical operational planning and programming.	VPF	Medium
B19		Begin to review the unsafe carriage of passengers in unprotected load areas of light trucks and identify measures to further reduce this crash risk.	PWD, VPF, MJCS	Low

4.3.3 PRIORITY ACTIVITIES FOR PERIOD C: 2027-2030

During 2027-2030, it is proposed to commence and implement four institutional management priority activities, and eight Safe System intervention priority activities. It is expected that by this period, GoV will have prepared a road safety strategy, which would incorporate lessons learnt, and include any outstanding activities from Period A and Period B. Some further recommendations that could be considered, once the road safety management and policy frameworks have been well-established, are outlined in Table 10 and Table 11 below.

Table 10: Implementation period 2027-2030 priority activities for institutional management functions

#	Institutional management function	Action	Proposed Responsible Organization(s)	Financing Needs
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C1	Results focus and coordination	Adopt a three-year action plan from 2027 to 2030, incorporating learnings from the previous period.	NRSC	Low
C2		Form a ministerial group with an agreed TOR.	NRSC	Low
C3	Monitoring and evaluation	Commence use of a comprehensive, reliable and accessible road crash data system, with data available in a timely manner for competent continuous analysis of crash risk by type and location.	NRSC, VPF, PWD, MoH, CIR	Medium
C4		Establish and resource ongoing monitoring and measurement of important intermediate outcome measures as well as final road safety outcomes and report widely on these levels and trends.	NRSC	Medium

Table 11: Implementation period 2027-2030 priority activities for Safe System interventions

#	Safe System intervention pillar	Action	Proposed Responsible Organization(s)	Financing Needs
C5	Safe roads and mobility	Maximize donor and government funded new road sealing projects that properly include safety measures.	PWD	High
C6		Identify a suitable set of infrastructure safety improvements with high cost effectiveness as part of externally funded projects, including: <ul style="list-style-type: none"> • Pedestrian infrastructure (crossings, footpaths including stream crossing provision, shoulder sealing for 50 m either side of schools); and • Other lower cost mass action safety treatments, such as small roundabouts, gateway treatments at villages, bridge end-post protection barrier treatments, treating poor visibility rural intersections, tight rural road curves, traffic calming near schools and other highly pedestrianized areas, and off through carriageway bus stops and signage. 	PWD, DOFT	High
C7		Begin to apply movement and place thinking to urban and peri urban road (and speed limit) settings.	PWD	Medium
C8	Safe vehicles	UNECE vehicle safety regulations to be mandated for all used vehicle imports as well as the eight-year maximum age limit	PWD, MJCS	Low
C9	Safe road users	Introduce a graduated licensing system (GLS) over time which seeks to progressively match increased risk on the roads to the increased driving experience young drivers have achieved. This should involve: <ul style="list-style-type: none"> • Learner drivers from 16 years of age should complete 60 hours of supervised driving practice under the supervision of a fully licensed driver (not a novice driver), filling out a logbook which is countersigned by the supervisor after each practice session and has to be presented to the testing officer at VPF before sitting for the practical driving test from age 18. This learner 	VPF, CIR, MJCS	Medium

		<p>driver approach would be part of a potential GLS, which seeks to progressively match increased risk on the roads to the increased driving experience young drivers have achieved</p> <ul style="list-style-type: none"> • Introduce limitations for drivers for a three-year period after achieving solo licensing to include a passenger restriction (one peer aged passenger with all other passengers either immediate family or fully licensed drivers) and a zero BAC limit. 		
C10		Provide police with additional evidentiary standard breathalyzer devices so that expanded drink driving enforcement can be introduced.	VPF	Medium
C11		Address the unsafe carriage of passengers in unprotected load areas of light trucks and identify measures to further reduce this crash risk.	PWD, VPF, MJCS	Low
C12		Mandate public bus speed compliance, with continued operation to be subject to no more than three speed infringements incurred by an operator per year. Embed outcomes of previous review of bus operations regarding the reduction in economic incentives to speed and unsafe overtaking.	PLTA	Low

4.4 THE ROAD AHEAD

This is the beginning of GoV’s road safety journey. There is certainly awareness throughout GoV of the risks on the road network, however there are fundamental gaps in the enabling environment for action through interventions.

Progress will depend on commitment from senior government officials to develop and pursue a road safety agenda and prioritize it rationally amongst other critical national priorities. There are actions that can be made, starting now, that will position Vanuatu for improved road safety outcomes. There should be no delay in moving towards establishing some sort of road safety management arrangement and investigating options to train and resource relevant people and ministries to drive road safety action. Small-scale road safety interventions should also begin to occur through coupling with any new road projects planned.

GoV should remain vigilant in ensuring that fatalities and serious injuries on the Vanuatu road network do not drastically increase in association with the road upgrade program planned. Not only will the length of roads travelled increase, and vehicles and amount of travel increase, but the travel speeds on the expanded network will also increase. This dual factor effect will serve to increase crash risk and it must be attended to if road fatalities are to be reduced. The ultimate vision for Vanuatu should be to eliminate fatalities and serious injuries completely. In time, establishing a clear direction through a robust strategy will demonstrate the path to this realization, however challenging. This major risk together with the need to reduce drink driving and speeding non-compliance are the major challenges facing GoV in its road safety efforts in the years ahead.

Ongoing support from international donors and partners is an important enabler for the progression and success of the road safety agenda in Vanuatu. The World Bank is a committed partner, and GoV should be assured that they will continue to provide support and guidance in the years ahead.

APPENDIX A: GRSF Capacity Assessment Guidelines - Checklists

Checklist 1: Results focus at system level²

Questions	Yes	Partial	Pending	No
Are estimates of the social costs of crashes available?				X
Are data on road deaths and injuries readily available?				X
Have the risks faced by road users been identified? <ul style="list-style-type: none"> · Drivers? · Motor cyclists? · Cyclists? · Others? · Passengers? · Pedestrians? · Children? 		X		
Has a national vision for improved road safety performance in the longer-term been officially set?				X
Have national and regional targets been set for improved safety performance? <ul style="list-style-type: none"> · Social cost targets? · Intermediate outcomes targets? · At risk group targets? · Other targets? · Final outcomes targets? · Intervention output targets? · Industry targets? 				X
Have all agencies responsible for improved safety performance been identified and are they formally held to account for their performance required to achieve the desired focus on results? <ul style="list-style-type: none"> · Highways? · Transport? · Justice? · Education? · Police? · Planning? · Health? · Others? 		X		
Have industry, community and business responsibilities for improved roads safety performance been clearly defined to achieve the desired focus on results?				X
Are regular performance reviews conducted to assess progress and make improvements to achieve the desired focus on results?				X
Has a lead agency been formally established to direct the national road safety effort to achieve the desired focus on results?				X
Is the lead agency role defined in legislation and/or policy documents and annual performance agreements to achieve the desired focus on results?				X

Interventions level:

Checklist 2: Planning, design, operation and use of the road network³

Questions	Yes	Partial	Pending	No
<p>Have comprehensive safety standards and rules and associated performance targets been set for the planning, design, operation and use of roads to achieve the desired focus on results?</p> <ul style="list-style-type: none"> · National roads? · Provincial roads? · Regional roads? · City roads? 				X
<p>Are the official speed limits aligned with <i>Safe System</i> design principles to achieve the desired focus on results?</p> <ul style="list-style-type: none"> · National roads? · Provincial roads? · Regional roads? · City roads? 	X			
<p>For each category of roads (national, regional, provincial, city) are compliance regimes in place to ensure adherence to specified safety standards and rules to achieve the desired focus on results?</p> <ul style="list-style-type: none"> · Road safety impact management? assessment? · Speed · Road safety audit? management? · Alcohol · Road safety inspection? management? · Safety belts · Black spot management? · Helmets management? · Network safety management? · Fatigue management? 				X
<p>Do the specified safety standards and rules and related compliance regimes clearly address the safety priorities of high-risk road user groups to achieve the desired focus on results?</p>				X
<p>Do the specified safety standards and rules and related compliance regimes compare favorably with international good practice?</p>				X

Checklist 3: Entry and exit of vehicles to and from the road network⁴

Questions	Yes	Partial	Pending	No
<p>Have comprehensive safety standards and rules and associated performance targets been set to govern the entry and exit of vehicles and related safety equipment to and from the road network to achieve the desired focus on results?</p> <ul style="list-style-type: none"> · Private vehicles? · Motorcycle helmets? · Commercial vehicles? · Cycle helmets? · Public transport vehicles? 				X
<p>For each category of vehicles and safety equipment (private, commercial, public, helmets) are compliance regimes in place to ensure adherence to the specified safety standards and rules to achieve the desired focus on results?</p> <ul style="list-style-type: none"> · Vehicle certification? · Vehicle inspection? · Helmet certification? 	X			

Do the specified safety standards and rules and related compliance regimes and safety rating surveys clearly address the safety priorities of high-risk road user groups to achieve the desired focus on results?				X
Do the specified safety standards and rules and related compliance regimes and safety rating surveys compare favorably with international good practice?				X

Checklist 4: Entry and exit of road users to and from the road network⁵

Questions	Yes	Partial	Pending	No
<p>Have comprehensive safety standards and rules and associated performance targets been set to govern the entry and exit of road users to and from the road network to achieve the desired focus on results?</p> <ul style="list-style-type: none"> • Private drivers and passengers? • Commercial drivers? • Cars? • Public transport drivers? • Heavy vehicles? • Taxis? • Mopeds? • Buses? • Motorcycles • Non-motorized vehicles? 		X		
<p>For each category of driver (private, commercial, public) are compliance regimes in place to ensure adherence to the specified safety standards and rules to achieve the desired focus on results?</p> <ul style="list-style-type: none"> • Driver testing? • Roadside checks? 		X		
<p>Do the specified safety standards and rules and related compliance regimes clearly address the safety priorities of high-risk road user groups to achieve the desired focus on results?</p> <ul style="list-style-type: none"> • Young drivers? • Commercial drivers? • Older drivers? • Public transport drivers? 		X		
Do the specified safety standards and rules and related compliance regimes compare favorably with international good practice?				X

Checklist 5: Recovery and rehabilitation of crash victims from the road network⁶

Questions	Yes	Partial	Pending	No
<p>Have comprehensive safety standards and rules and associated performance targets been set to govern the recovery and rehabilitation of crash victims from the road network to achieve the desired focus on results?</p> <ul style="list-style-type: none"> · Pre-hospital? · Hospital? · Long-term care? 		X		
<p>For each category of post-crash service (pre-hospital, hospital, and long- term care) are compliance regimes in place to ensure adherence to the specified safety standards and rules to achieve the desired focus on results?</p>				X
<p>Do the specified safety standards and rules and related compliance regimes clearly address the safety priorities of high-risk road user groups to achieve the desired focus on results?</p>				X

Implementation level:

Checklist 6: Coordination⁷

Questions	Yes	Partial	Pending	No
Are interventions being coordinated horizontally across agencies to achieve the desired focus on results?				X
Are interventions being coordinated vertically between national, regional, provincial and city agencies to achieve the desired focus on results?				X
Have robust intervention delivery partnerships between agencies, industry, communities and the business sector been established to achieve the desired focus on results?				X
Have Parliamentary committees and procedures supporting the coordination process been established to achieve the desired focus on results?				X

Checklist 7: Legislation⁸

Questions	Yes	Partial	Pending	No
Are legislative instruments and procedures supporting interventions and institutional management functions sufficient to achieve the desired focus on results?		X		
Are legislative instruments and procedures supporting interventions and institutional management functions regularly reviewed and reformed to achieve the desired focus on results?				X

Checklist 8: Funding and resource allocation⁹

Questions	Yes	Partial	Pending	No
Are sustainable funding mechanisms supporting interventions and institutional management functions in place to achieve the desired focus on results? <ul style="list-style-type: none"> • Central budget? • Road fund? • Fees? • Other sources? 				X
Are formal resource allocation procedures supporting interventions and institutional management functions in place to achieve the desired focus on results? <ul style="list-style-type: none"> • Cost effectiveness? • Cost benefit? 				X
Is there an official Value of Statistical Life and related value for injuries to guide resource allocation decisions?				X
Are funding mechanisms and resource allocation procedures supporting interventions and institutional management functions sufficient to achieve the desired focus on results?				X

Checklist 9: Promotion

Questions	Yes	Partial	Pending	No
Is road safety regularly promoted to achieve the desired focus on results? <ul style="list-style-type: none"> · Overall vision and goals? · Specific interventions? · Specific target groups? 				X

Checklist 10: Monitoring and evaluation

Questions	Yes	Partial	Pending	No
For each category of roads (national, regional, provincial, city) are sustainable systems in place to collect and manage data on road crashes, fatality and injury outcomes, and all related road environment/vehicle/road user factors to achieve the desired focus on results?				X
For each category of roads (national, regional, provincial, city) are sustainable systems in place to collect and manage data on road network traffic, vehicle speeds, safety belt and helmet wearing rates to achieve the desired focus on results?				X
For each category of roads (national, regional, provincial, city) are regular safety rating surveys undertaken to quality assure adherence to specified safety standards and rules, to achieve the desired focus on results? <ul style="list-style-type: none"> · Risk ratings? · Road protection scores? 				X
For each category of roads (national, regional, provincial, city) are systems in place to collect and manage data on the output quantities and qualities of safety interventions implemented to achieve the desired focus on results? <ul style="list-style-type: none"> · Safety engineering activities? treatments? · Police operations? · Educational activities? services? · Promotional · Driver training? · Vehicle testing? · Emergency medical 				X
For each category of vehicles and safety equipment (private, commercial, public, helmets) are systematic and regular safety rating surveys undertaken to quality assure adherence to the specified safety standards and rules to achieve the desired focus on results? <ul style="list-style-type: none"> · Vehicle safety rating? · Helmet testing? 				X
For each category of post-crash service (pre-hospital, hospital, long-term care) are systematic and regular surveys undertaken to quality assure adherence to the specified standards and rules to achieve the desired focus on result?				X
Are systems in place to monitor and evaluate safety performance against targets regularly to achieve the desired focus on results?				X
Do all participating agencies and external partners and stakeholders have open access to all data collected?				X

Checklist 11: Research and development and knowledge transfer

Questions	Yes	Partial	Pending	No
<p>Has a national road safety research and development strategy been established to achieve the desired focus on results?</p> <ul style="list-style-type: none"> · Vehicle factors? · Highway factors? · Human factors? · Institutional factors? · Other factors? 				X
<p>Has an independent national road safety research organization been established to achieve the desired focus on results?</p> <ul style="list-style-type: none"> · Vehicle factors? · Highway factors? · Human factors? · Institutional factors? · Other factors? 				X
<p>Have demonstration and pilot programs been conducted to achieve the desired focus on results?</p> <ul style="list-style-type: none"> · Vehicle factors? · Highway factors? · Human factors? · Institutional factors? · Other factors? 				X
<p>Are mechanisms and media in place to disseminate the findings of national road safety research and development to achieve the desired focus on results?</p> <ul style="list-style-type: none"> · Conferences? · Seminars? · Training? · Journals? · Other? 				X

Checklist 12: Lead agency role and institutional management functions

Questions	Yes	Partial	Pending	No
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>results focus</i> management function?</p> <ul style="list-style-type: none"> · Appraising current road safety performance through high-level strategic review? · Adopting a far-reaching road safety vision for the longer term? · Analyzing what could be achieved in the medium term? · Setting quantitative targets by mutual consent across the road safety partnership? · Establishing mechanisms to ensure partnership accountability for results? 				X
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>coordination</i> management function?</p> <ul style="list-style-type: none"> · Horizontal coordination across central government? · Vertical coordination from central to regional and local levels of government? · Specific delivery partnerships between government, non-government, community and business at the central, regional and local levels? · Parliamentary relations at central, regional and local levels? 				X
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>legislation</i> management function?</p> <ul style="list-style-type: none"> · Reviewing the scope of the legislative framework? · Developing legislation needed for the road safety strategy? · Consolidating legislation? · Securing legislative resources for road safety? 				X
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>funding and resource allocation</i> management function?</p> <ul style="list-style-type: none"> · Ensuring sustainable funding sources? · Establishing procedures to guide the allocation of resources across safety programs? 				X
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>promotion</i> management function?</p> <ul style="list-style-type: none"> · Promotion of a far-reaching road safety vision or goal? · Championing and promotion at high level? · Multisectoral promotion of effective interventions and shared responsibility? · Leading by example with in-house road safety policies? · Developing and supporting safety rating programs and the publication of their results? · Carrying out national advertising? · Encouraging promotion at local level? 				X
<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>monitoring and evaluation</i> management function?</p> <ul style="list-style-type: none"> · Establishing and supporting data systems to set and monitor final and intermediate outcome and output targets? · Transparent review of the national road safety strategy and its performance? · Making any necessary adjustments to achieve the desired results? 				X

<p>Does the lead agency (or de facto lead agency/agencies) effectively contribute to the <i>research and development and knowledge transfer</i> management function?</p> <ul style="list-style-type: none"> • Developing capacity for multi-disciplinary research and knowledge transfer? • Creating a national road safety research strategy and annual program? • Securing sources of sustainable funding for road safety research? • Training and professional exchange? • Establishing good practice guidelines? • Setting up demonstration projects? 				X
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² It is important to probe the risks faced by different road user groups, assisted by available data from highway agencies, police, hospitals and other sources. It is also important to locate and rank those sections of the road network with the highest concentrations of deaths and injuries, across the hierarchy of urban roads and the hierarchy of inter-urban roads. Where data are deficient or simply unavailable extensive consultations with relevant groups may be required to identify user groups most at risk and to locate hazardous sections of the network. The best starting point for these discussions is within the health sector, particularly with the emergency services staff that attend to crash victims in the pre-hospital phase. The issue of acceptable and achievable levels of safety and related responsibilities and accountabilities must be addressed at the highest agency and ministerial levels, especially across the transport and health sectors. In this dialogue it is important to identify and discuss the scale of the national health loss incurred by road crashes, compared to other causes of death and injury in the country concerned.

³ Each country will have its own defined road hierarchy and the road categories assessed must be adjusted to this. The checklist is indicative of the network coverage required. Close attention should be paid to the safety standards that are set for road network design and the extent to which they are clearly defined within a hierarchy of roads and respond to identified road user risks. It is also important to review if safety audits are conducted to ensure compliance with these standards and if network surveys and inspections are regularly carried out for safety maintenance and hazard identification purposes. Police enforcement of safety standards and rules must be carefully examined. Particular attention should be paid to police operational practices targeting unsafe behaviors like speeding, drink-driving and the non-wearing of safety belts and helmets. Likewise, police enforcement of the safety of commercial transport operations – both freight and passenger – must be reviewed. It is most important to assess if the overall scale of police enforcement initiatives is enough to ensure effective compliance. Experience in good practice jurisdictions indicates that about 20 percent of total police budgets are dedicated to strategic road policing activities, with the emphasis being on general deterrence operations. The extent to which road user education and awareness campaigns are designed to support police enforcement initiatives should also be appraised

⁴ In the case of entry and exit controls, safety standards and related compliance regimes for vehicles and road users should be thoroughly appraised. Vehicle safety standards are important for vehicle users and vulnerable road users. Procedures for ensuring compliance with them, as a prerequisite for entry to the vehicle fleet, should be reviewed. These standards can relate to active safety features (for example, electronic stability control, lighting and conspicuity) and passive safety features (for example, side and frontal impact protection; pedestrian, cyclist and motorcyclist protection; and safety belts). Standards promulgated by the world’s leading vehicle safety jurisdictions—US, Japan and Europe—provide a useful benchmark for assessing country policies. Safety ratings of new car performance in crash tests provide a useful reference point for assessing country fleet quality

⁵ The extent to which driver licensing standards take account of the higher crash risks of novice drivers and older drivers should also be reviewed.

⁶ Post-crash services merit close attention, especially in low and middle-income countries where safety performance is poor and high benefit-cost returns can be anticipated from improved emergency and rehabilitation services.

⁷ National coordinating bodies may exist; but unless their membership includes agencies that are fully accountable and funded for road safety results, experience suggests they will be ineffective. More specifically, in good practice countries these coordinating bodies are usually the extension of accountable lead agencies that own and use them as platforms for mobilizing resources and coordinating and focusing multi-sectoral partnerships, in pursuit of agreed results.

⁸ Specialist skills will most likely be required to review road safety legislation. This will depend on the complexities of the legal codes and the extent to which they have been structured or restructured to consolidate previous legislation. Road safety legislation typically addresses road, vehicle and user safety standards and rules—and related compliance—but it has often evolved over time, without adequate cross-referencing.

⁹ Identifying and quantifying total funding allocated to agencies for road safety can be difficult, particularly when it is embedded in broader sector budgets. However, it is important to seek high-level confirmation of budget sources, processes and levels.

APPENDIX B: Methodology

The Road Safety Management Capacity Assessment (RSMCA) meetings were carried out in accordance with the World Bank Global Road Safety Facility (GRSF) guidelines and country capacity checklists, and the methodology for review applied the Safe System Approach. The level of investigation was strategic, and jurisdictional road safety management capacity was assessed with reference to three best practice dimensions: results, interventions and institutional management functions, as shown in Figure 25. The intervention level is informed by the United Nations Safe System pillars. Significant results warrant reforms in both institutional management functions and interventions.

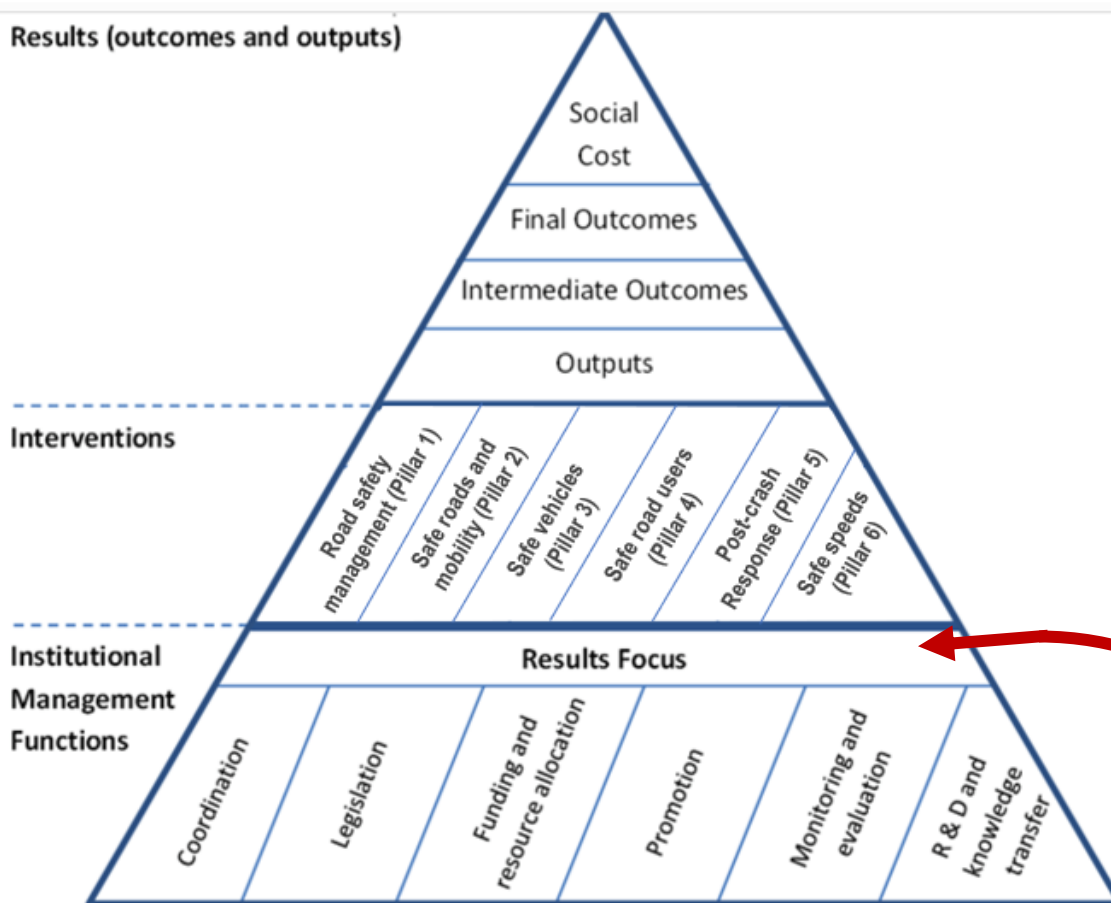


Figure 25: The Road Safety Management System¹⁰

A Capacity Review focuses on these Seven Institutional Management Functions (especially the results focus function) as well as on Interventions

Note: leadership, target setting, data systems and data analysis—essential institutional management functions—are an integral component of the overarching results focus institutional management function.

Table 12 lists the RSMCA activities with the associated GRSF checklist(s) used to guide the assessment, as well as the relevant Safe System pillar, where applicable.

Table 12: Road Safety Management Capacity Assessment activities and guiding Global Road Safety Facility checklists/Safe System pillars

Activity	GRSF Checklist	Safe System Pillar
One on one interviews with road safety stakeholders.	All checklists	All pillars
Review of the existing national structure for road safety management.	Checklist 6: Coordination; Checklist 7: Legislation; Checklist 8: Funding and resource allocation; Checklist 9: Promotion; Checklist 10: Monitoring and evaluation; and Checklist 11: Research and development and knowledge transfer Checklist 12: Lead agency role and institutional management functions	Road safety management
Appraisal of road safety management capacity at the intervention level.	Checklist 2: Planning, design, operation and use of the road network; Checklist 3: Entry and Exit of vehicles to & from the road network; Checklist 4: Entry and Exit of road users to & from the road network; and Checklist 5: Recovery and rehabilitation of crash victims from the road network	Safe Roads, Safe Speeds and Safe Road Users Safe vehicles Safe Road Users (Drivers/riders) Post-Crash Care
Provide recommendations to improve the required road safety management capacity.	All checklists and pillars	All pillars

B.1 GLOBAL ROAD SAFETY FACILITY GUIDELINES FOR ROAD SAFETY MANAGEMENT REVIEWS AND SAFE SYSTEM PROJECTS

The Global Road Safety Facility (GRSF) Guidelines for Road Safety Management Reviews and Safe System Projects (Bliss and Breen 2013) are based on important key concepts that underpin effective road safety management in any country. These concepts provide the basis for assessment of the adequacy of current arrangements in a country. Proper account needs to be taken of current road safety management capacity weaknesses that present a formidable barrier to progress. The improvement or development required to attain a suitable level of capacity to deliver improved road safety performance can then be identified.

These concepts are summarized below in Box 1. They highlight the importance of addressing all elements of the road safety management system, taking a staged approach to country road safety investment, and targeting the highest concentrations of deaths and injuries across the road network.

Box 1: Key concepts underpinning the guidelines (Bliss and Breen 2013)

Addressing all elements of the road safety management system (A comprehensive approach)

Road safety is produced, just like other goods and services. This production process can be viewed as a management system with three distinctive elements to be considered: (1) *institutional management functions*, which produce (2) *interventions*, which in turn produce (3) *results*. Discussions concerning road safety improvements often concern (2) alone. However, assessing all elements of the road safety management system and the linkages between them is critical for any country seeking to improve its current performance levels.

Taking a staged approach to road safety investment (Prioritization)

A long-term investment strategy is required to continuously improve national road safety performance. It must be designed to overcome revealed country capacity weaknesses by first building a core capacity to bring targeted safety outcomes under control, then scaling up investment to accelerate this capacity strengthening and improved performance across the national road network, and finally consolidating it on a sustainable basis.

This staged approach to investment acknowledges the barriers imposed by weak safety management capacity and addresses the challenge of accelerating the necessary process of institutional strengthening which is required to effectively govern the production of improved road safety results. It recognizes the longer-term implications of immediate actions and plans the necessary scaling up of investment required to achieve a sustainable path where safety outcomes are brought under control.

In effect the long-term investment strategy is implemented by a program of successive projects that build on the results achieved and the management capacity created in the process. Successful implementation of the investment strategy hinges on designing projects that accelerate the transfer of road safety knowledge to participants, strengthen the capacity of participating partners and stakeholders, and rapidly produce results through an appropriate roll-out program.

Targeting the highest concentrations of deaths and injuries across the road network (Materiality)

To produce rapid results projects must target the highest concentrations of death and injuries across the road network to maximize program and project benefit-cost ratios and the likelihood of achieving them. The bulk of deaths and injuries are usually incurred on a small proportion of a country's road network, which simply reflects the concentration of traffic on key network links where less safe travel speeds are experienced. In the absence of reliable fatality and injury data it is still possible to identify the most dangerous corridors by identifying high traffic volume, higher speed corridors, where higher densities of fatal and serious injury crashes can be anticipated.

The GRSF Capacity Review Guidelines contain several detailed checklists (numbered 1 to 12), which are to be applied in any country review of road safety management capacity. These are listed in some detail in appendix E.

The guidelines promote the Safe System Approach (described further below) and also address the challenge of how to benefit from what has been learned at great cost in high-income countries over the last 50 years, to avoid their high death and injury rates resulting from road crashes that for far too long were accepted as an inevitable price of economic growth and rapid motorization.

B.2 SAFE SYSTEM APPROACH

In addition, this RSMCA is aligned with the Safe System Approach (OECD/ITF 2008) to road safety, which has been adopted by the United Nations as the basis for the Decade of Action Plan 2010 to 2020, and is widely applied at various levels of development and understanding around the world. A Safe System is based on the premise that road crashes are both predictable and preventable, and that it is possible to move towards zero road deaths and serious injuries. This, however, requires a fundamental rethink of the governance and implementation of road safety policy. A Safe System is a holistic and proactive approach to road safety, managed so the elements of the road system combine and interact to guide users to act safely and to prevent crashes, and when crashes occur, ensure that impact forces do not exceed the limits that result in serious injury or death. If one part of the system fails, the other components act to prevent serious harm (ITF 2016). If a crash occurs and road users are acting in accordance with road rules, then it is the combination of infrastructure safety features, travel speed and vehicle safety and protective features which determine whether those road users live or die. Human error is inevitable, but traffic fatalities and serious injuries are not.

The Safe System can be considered at three levels¹¹: it is a vision, a set of principles and a group of elements that interact to determine severity of crash outcomes.

1. The vision is for zero fatalities and serious injuries in due course. Some jurisdictions are actively planning to achieve zero fatalities by 2050.
2. The key principles underpinning Safe System are:
 - Human beings are fallible and make mistakes;
 - Humans are fragile and there is a limit to the forces the human body can withstand in any crash; and
 - Road safety is a shared responsibility of all those involved in the road system, including those who design, build, manage and use roads and vehicles and provide post-crash care.
3. Safe system elements. There are six Safe System elements or pillars (road safety management; safe roads and mobility; safe vehicles; safe road users; post-crash care; and safe speeds), as shown in Figure 26.

The Organization for Economic Cooperation and Development (OECD) and the International Transport Forum (ITF) have described the principles of the Safe System Approach as:

- Addressing all elements of the road traffic system in an integrated way;
- Focusing on preventing death and serious injury rather than the prevention of crashes, which is an unrealistic goal;
- Challenging the fatalistic view that road traffic injury is the price to be paid for achieving mobility and economic development by setting a societal goal (with interim targets) to eliminate road deaths and serious injuries in the long-term which can motivate and encourage all involved;

- Accentuating the safety responsibility of designers of the road traffic system for achieving road safety results and promoting a shared vision amongst citizen, public, and private organizations regarding the ultimate safety ambition of eliminating fatal and serious injury;
- Aiming to develop a road traffic system better able to accommodate human error, so that no individual road user is exposed to crash forces likely to result in death or serious injury;
- Using social and economic analyses to understand the scale of the trauma problem, and direct investment into those programs and locations where the greatest potential benefit to society exists;
- Demanding equity in addressing the safety needs of both motorized and non-motorized users, and aligning safety with the goals of sustainable development and other societal objectives such as improved air quality, greenhouse gas reduction, poverty reduction and social inclusiveness; and
- Necessitating the strengthening of all elements of the road safety management system, especially institutional management functions, to achieve sustainable success.

The safe system Elements or Pillars



-  Pillar 1: Road safety management
-  Pillar 2: Safe roads
-  Pillar 3: Safe Speeds
-  Pillar 4: Safer Road Users
-  Pillar 5: Safe Vehicles
-  Pillar 6: Post Crash Response

UN Decade of Action
- 6 pillars adoption



Figure 26: Safe System pillars¹²

Additional information on the evolution of results focus to the Safe System approach is provided below.

B.3 EVOLUTION OF RESULTS FOCUS TO SAFE SYSTEM

Successive shifts in road safety management thinking and practices in high-income countries have been evident over the last fifty years (Bliss and Breen 2009). Rapid motorization and escalating road deaths and injuries began in many OECD countries in the 1950s and 1960s and concurrently the ambition to improve road safety outcomes began to grow. Since the 1950s there have been four significant phases of road safety management which have become progressively more ambitious in terms of the results desired.

RESULTS FOCUS—PHASE 1: FOCUS ON DRIVER INTERVENTIONS.

In the 1950s and 1960s safety management was generally characterized by dispersed, uncoordinated, and insufficiently resourced institutional units performing isolated single functions (Trinca and others 1988). Road safety policies placed considerable emphasis on the driver by establishing legislative rules and penalties, supported by information and publicity, and expecting subsequent changes in behavior. It was argued that since human error mostly contributed to crash causation it could be addressed most effectively by educating and training the road user to behave better. Placing the onus of blame on the road traffic victim acted as a major impediment to the appropriate authorities fully embracing their responsibilities for a safer road traffic system (Rumar 1999).

RESULTS FOCUS—PHASE 2: FOCUS ON SYSTEM-WIDE INTERVENTIONS.

In the 1970s and 1980s these earlier approaches gave way to strategies which recognized the need for a systems approach to intervention. Dr. William Haddon, an American epidemiologist, developed a systematic framework for road safety based on the disease model which encompassed infrastructure, vehicles and users in the pre-crash, in-crash and post-crash stages (Haddon 1968). Central to this framework was the emphasis on effectively managing the exchange of kinetic energy in a crash which leads to injury, to ensure that the thresholds of human tolerances to injury were not exceeded. The scope of policy broadened from an emphasis on the driver in the pre-crash phase to also include in-crash protection (both for roadsides and vehicles) and post-crash care. This focused road safety management on a system-wide approach to interventions and the complex interaction of factors which influence injury outcomes. It underpinned a major shift in road safety practice which took several decades to evolve. However, the focus remained at the level of systematic interventions and did not directly address the institutional management functions producing these interventions or the results that were desired from them. The strengths of this approach mask its inherent weakness as being viewed as embracing all the essential elements of the road safety management system, whereas the institutional context is not directly addressed. In many ways much of the contemporary debate on road safety is still bounded by the dimensions of the ‘Haddon Matrix’ which only addresses system-wide interventions and for this reason institutional management functions and the related focus on results still receive limited attention.

RESULTS FOCUS—PHASE 3: FOCUS ON SYSTEM-WIDE INTERVENTIONS, TARGETED RESULTS AND INSTITUTIONAL LEADERSHIP.

By the early 1990s good practice countries were using intervention focused plans setting numerical outcome targets to be achieved with packages of system-wide measures based on the evidence generated from ongoing monitoring and evaluation. It had become clear that growing motorization need not inevitably lead to increases in death rates but could be reversed by continuous and planned investment in improving the quality of the traffic system. The United Kingdom, for example, halved its death rate (per 100,000 head of population) between 1972 and 1999 despite a doubling in motorized vehicles. Stronger expressions of political will were evident and institutional management functions were becoming more effective. Institutional leadership roles were identified, inter-governmental coordination processes were established, and funding and resource allocation mechanisms and processes were becoming better aligned with the results required. Developments in Australasian jurisdictions (such as Victoria and New Zealand) further enhanced institutional management functions concerning results focus, multi-sectoral coordination, delivery partnerships, and funding mechanisms (Bliss 2004; Trinca and others 1988). Accountability arrangements were enhanced by the use of target hierarchies linking institutional outputs with intermediate and final outcomes to coordinate and integrate multi-sectoral activities. This phase laid the foundation for today's good practice and reflects the state of development in many higher performing countries today. The strengths of this approach can turn into weaknesses to the extent that the focus on safer people, safer vehicles, safer roads and safer systems diverts attention away from the road network where the actual deaths and injuries are incurred. Successful targeted plans have achieved large measurable gains in improved road user behavior and this success helped to reinforce the earlier approach which focused purely on driver interventions. The sharpened emphasis on setting ambitious but achievable targets could also inhibit innovation, to the extent that targets are bounded by what is deemed to be technically feasible and institutionally manageable, thus blunting the aspiration to go beyond what existing evidence suggests is achievable.

RESULTS FOCUS—PHASE 4: FOCUS ON SAFE SYSTEM LONG-TERM ELIMINATION OF DEATHS AND SERIOUS INJURIES AND SHARED RESPONSIBILITY.

By the late 1990s two of the world's best performing countries had determined that improving upon the ambitious targets that had already been set would require rethinking of interventions and institutional arrangements. The Dutch Sustainable Safety (Wegman and others 1997) and Swedish Vision Zero (Tingvall 1995) strategies set a goal to make the road system intrinsically safe.

The emphasis on effectively managing the exchange of kinetic energy in a crash to ensure that the thresholds of human tolerances to injury were not exceeded (as originally promoted in Phase 2) was revitalized and given an ethical underpinning in the sense that road deaths and injuries were seen as an unacceptable price for mobility. The implications of this level of ambition are still being worked through in the countries concerned and elsewhere. These strategies recognize that speed management is central and have refocused attention on road and vehicle design and related protective features. The blame the victim culture is superseded by blaming the traffic system which throws the spotlight on the shared responsibility and accountability for the delivery of a Safe System.

For example, Vision Zero aims for an approach in which safe vehicle design delivers a protected occupant into a road system where conflict is minimized by design and energy transfer in crashes is safely controlled. In this system users comply with risk-averse behavioral norms created by education, enforcement and incentives. The emphasis is on the road users' right to health in the transport system and their right to demand safer systems from decision-makers and road and vehicle providers. The strengths of this approach are becoming increasingly evident. What was previously seen as radical and unachievable by many road safety practitioners and policymakers has quickly become the benchmark and central debating point for analyses of what constitutes acceptable road safety results.

The tools and accumulated practices used to support the results management framework for the Safe System approach are the same as those used in the past to prepare targeted national plans. Targets are still set as milestones to be achieved on the path to the ultimate goal, but the interventions are now shaped by the level of ambition, rather than vice versa. Innovation becomes a priority to achieve results that go well beyond what is currently known to be achievable. In moving forward, the Safe System approach reinterprets and revitalizes what is already known about road safety and raises critical issues about the wider adoption of interventions that have proven to be effective in eliminating deaths and serious injuries (for example, median barriers). The question becomes one of how to introduce these proven safety interventions more comprehensively and rapidly, and indeed this question applies to all elements of the road safety management system with potential for improvement.

The shift to a Safe System Approach as outlined in the OECD/ITF Report, *Towards Zero*, (OECD/ITF 2008), is also well attuned to the high priority global, regional, and country development goals of sustainability, harmonization and inclusiveness. A Safe System is dedicated to the elimination of deaths and injuries that undermine the sustainability of road transport networks and the communities they serve. Its focus on safer and reduced speeds harmonizes with other efforts to reduce local air pollution, greenhouse gases and energy consumption. And its priority to afford protection to all road users is inclusive of the most vulnerable at-risk groups such as pedestrians, young and old, cyclists and motorcyclists. These co-benefits of shifting to a Safe System approach further strengthen the business case for its implementation.

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¹⁰ Bliss and Breen, building on the frameworks of Land Transport Safety Authority, 2000; Wegman, 2001; Koornstra et al, 2002; Bliss, 2004.

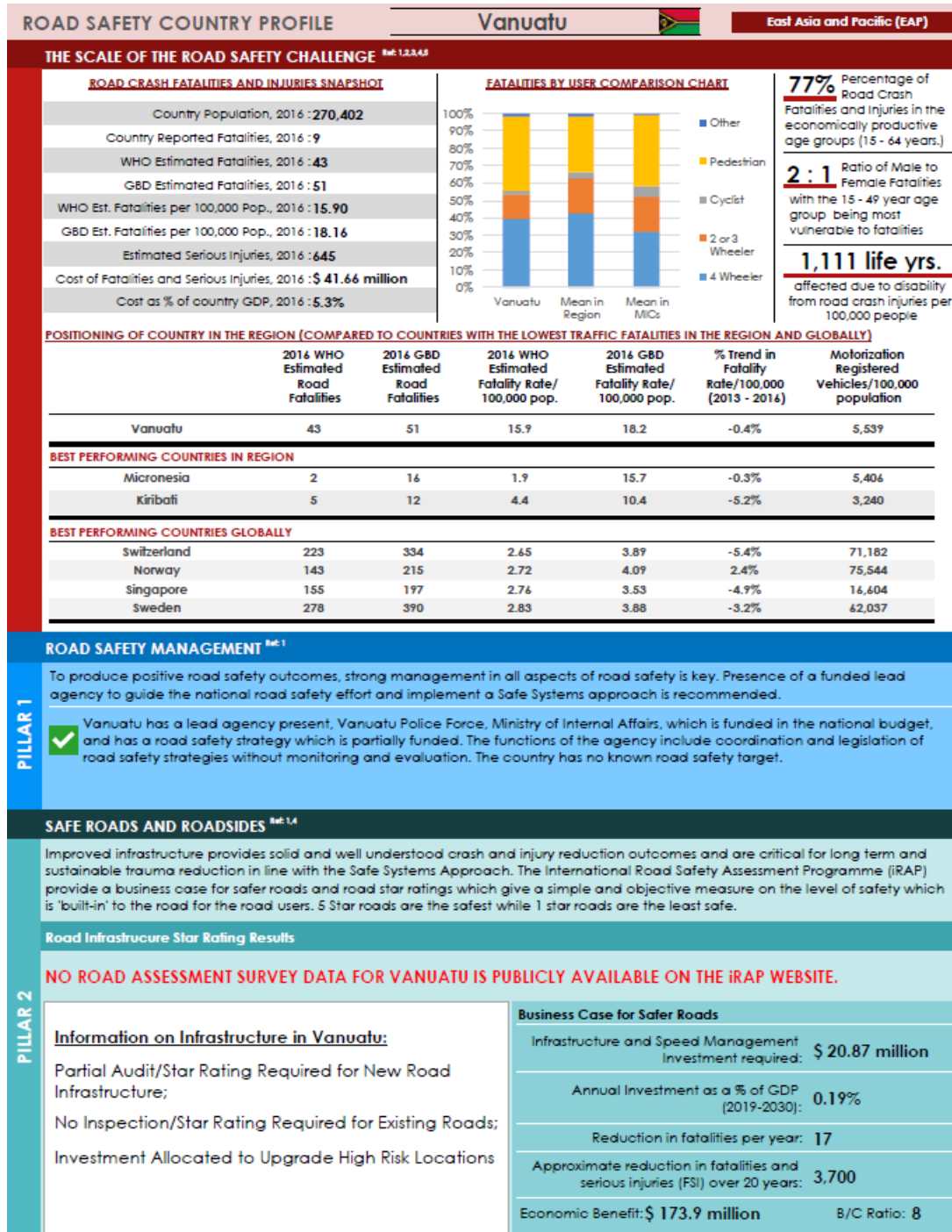
¹¹ Drawn from the *Safe System Session* by Eric Howard for the Monash University Accident Research Centre *Road Safety Management Leadership Program*, Melbourne 2017 - 2019

¹² Drawn from the *Safe System Session* by Eric Howard for the Monash University Accident Research Centre *Road Safety Management Leadership Program*, Melbourne 2017 - 2019

APPENDIX C: Persons Consulted

Consultation meeting	Representative(s)	Date
PWD	Mr. Andre Iatipu (Acting Director, PWD) Mr. Paula Baleilevuka (Deputy Head Project Implementation Unit, VCRTTP) Mr. Alick Loas (Annual work program architect, PWD)	15/02/21, 26/02/21
LTA	Mr. Reginald Tabi Gerian (CEO, LTA)	16/02/21
MoET	Mr. Marcel Yamsiu (Principal Education Officer, MoET)	16/02/21
VPF	Insp. Edward Kalura (Inspector Road Safety, Port Vila, VPF)	17/02/21
Port Vila Municipality	Mr. Mandes Tangaras (Port Vila Municipality Town Planner)	17/02/21
SLO	Mr. Arnold Kiel Loughman (Attorney General)	19/02/21
ADB	Mr. David Fay (Senior Infrastructure Specialist, ADB)	19/02/21
DFAT/R4D	Mr. Baddley Sinilau (High Commission Program Manager, Infrastructure) Mr. Eric Stensness (Team Leader, R4D) Mr. Charles Andrews (DFAT, Infrastructure Advisor)	23/02/21
PSC	Mr. Stephane Bong (Officer-In-Charge, PSC)	23/02/21
MLNR	Mr. Darren Fatu (Senior Planning and Enforcement Officer) Mr. Tony Kanas (Surveyor General)	24/02/21
JICA	Mr. Motegi Akihito (Project Information Advisor, JICA)	25/02/21
MJCS	Ms. Jenny Tevi (Policy Advisor, MJCS) Ms. Ginnette Morris (Disability Social Welfare Coordinator, MJCS)	01/03/21
VCCI	Ms. Astrid Boulekone (General Manager, VCCI)	02/03/21
CIR	Mr. Melton Aru	03/03/21
MoH	Dr Vincent Atua	08/03/21

APPENDIX D: Additional Information on Road Safety in Vanuatu



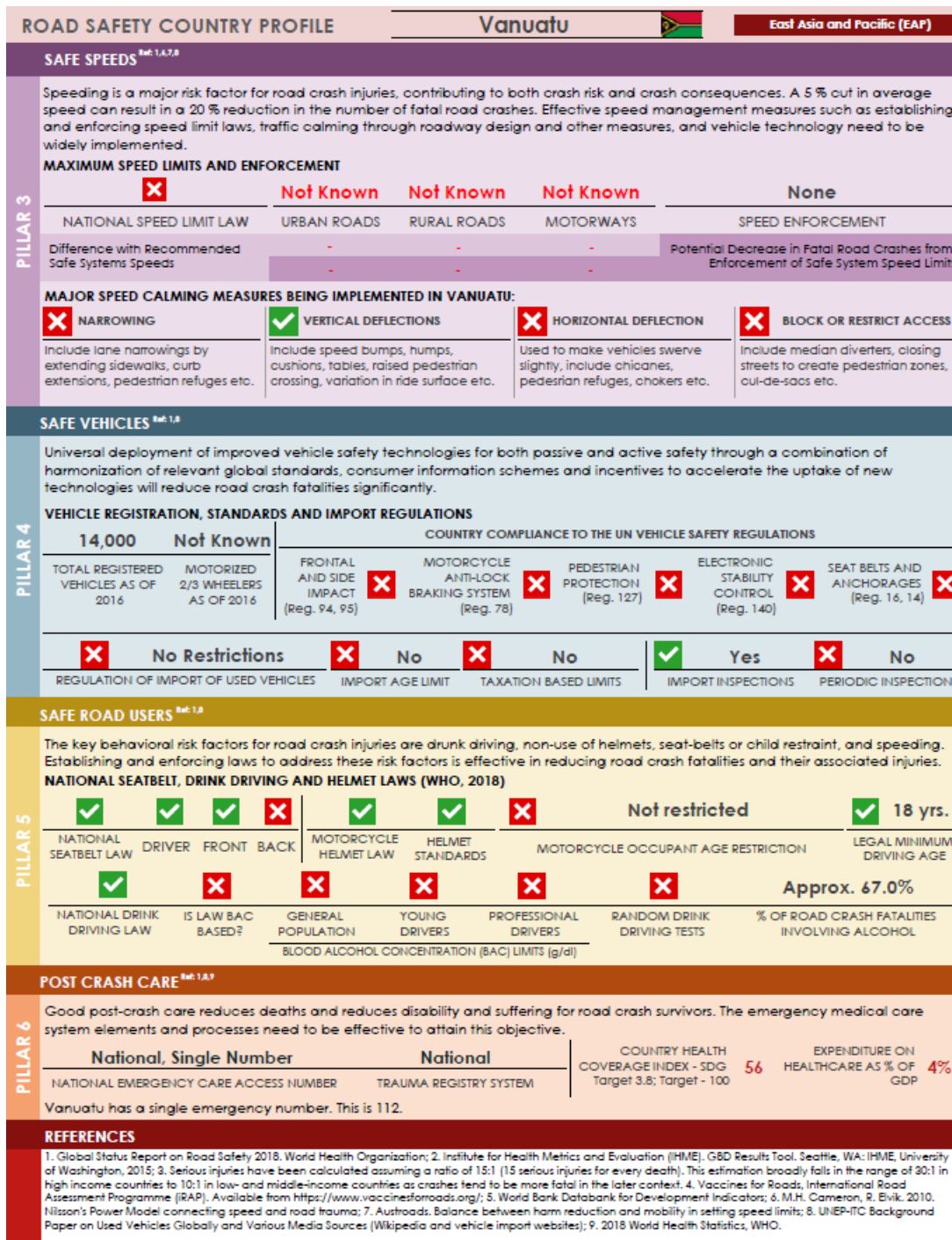


Figure 27: World Bank Road Safety Country Profile–Vanuatu (World Bank 2020)

Vanuatu

Population: 270 402 | Income group: Middle | Gross national income per capita: US\$ 3 170²



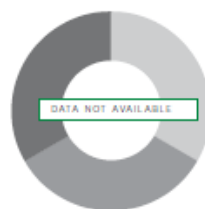
INSTITUTIONAL FRAMEWORK	
Lead agency	Vanuatu Police Force, Ministry of Internal Affairs
Funded in national budget	Yes
National road safety strategy	
Funding to implement strategy	Partially funded
Fatality reduction target	—
SAFER ROADS AND MOBILITY	
Audits or star rating required for new road infrastructure	Partial
Design standards for the safety of pedestrians / cyclists	Partial
Inspections / star rating of existing roads	No
Investments to upgrade high risk locations	Yes
Policies & investment in urban public transport	Yes
SAFER VEHICLES	
Total registered vehicles	—
Cars and 4-wheeled light vehicles	—
Motorized 2- and 3-wheelers	—
Heavy trucks	—
Buses	—
Other	—
Vehicle standards applied (UNECE WP29)	
Frontal impact standard	No
Electronic stability control	No
Pedestrian protection	No
Motorcycle anti-lock braking system	No
POST-CRASH CARE	
National emergency care access number	National, single number
Trauma registry	National
Formal certification for prehospital providers	No
National assessment of emergency care systems	No
DATA	
Reported road traffic fatalities (2016)	9 ^a (67% M, 33% F)
WHO estimated road traffic fatalities (2016)	43 (95% CI 39 - 48)
WHO estimated rate per 100 000 population (2016)	15.9

^a Data available only for 2014.
^b Vanuatu Police (annual records). Died at scene of crash.

SAFER ROAD USERS	
National speed limit law	
National speed limit law	No
Max urban speed limit	—
Max rural speed limit	—
Max motorway speed limit	—
Local authorities can modify limits	—
Enforcement	—
Predominant type of enforcement	—
National drink-driving law	
National drink-driving law	Yes ^a
BAC limit – general population	—
BAC limit – young or novice drivers	—
Random breath testing carried out	No
Testing carried out in case of fatal crash	No
Enforcement	① 1 2 3 4 5 6 7 8 9 10
% road traffic deaths involving alcohol	67% ^a
National motorcycle helmet law	
National motorcycle helmet law	Yes
Applies to drivers and passengers	Yes
Helmet fastening required	Yes
Helmet standard referred to and/or specified	Yes
Children passengers on motorcycles	Not restricted
Enforcement	0 1 2 3 4 5 6 7 8 9 10
Helmet wearing rate	90% Drivers ^a , 90% Passengers ^a
National seat-belt law	
National seat-belt law	Yes
Applies to front and rear seat occupants	No
Enforcement	0 1 2 3 4 5 6 7 8 9 10
Seat-belt wearing rate	20% Front seats ^a , 10% Rear seats ^a
National child restraint law	
National child restraint law	No ^b
Children seated in front seat	Allowed in a child restraint ^a
Child restraint required	—
Child restraint standard referred to and/or specified	—
Enforcement	—
% children using child restraints	—
National law on mobile phone use while driving	
National law on mobile phone use while driving	No
Ban on hand-held mobile phone use	—
Ban on hands-free mobile phone use	—
National drug-driving law	
National drug-driving law	Yes

^a Not based on BAC.
^b 2016, Vanuatu Police, Traffic occurrence book.
^c 2016, Vanuatu Police Force.
^d Legislation allows that infants (defined as children under 3 years) be held by a responsible person as an alternative to using special seats.
^e Infant (defined as children under 3 years) shall be placed in a restraining seat while travelling in the front.

Deaths by road user category



Trends in reported road traffic deaths



Source: 2012, GSRHS3

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Legislation reviewed by WHO, Vehicle safety data from UNECE WP29. Other data collected by questionnaire and derived by the Ministry of Health.

Figure 28: Extract from 'Vanuatu - Road Safety Performance 2016', World Health Organization Global Status Report on Road Safety (WHO 2018)

REFERENCES

<https://data.worldbank.org/country/vanuatu> World Bank. 2020. *Guide for Road Safety Opportunities and Challenges: Low- and Middle-Income Country Profiles*. Washington D.C.: World Bank.
<http://documents1.worldbank.org/curated/en/447031581489115544/pdf/Guide-for-Road-Safety-Opportunities-and-Challenges-Low-and-Middle-Income-Country-Profiles.pdf>.

WHO (World Health Organization). 2018. *Global Status Report on Road Safety 2018*. Geneva: World Health Organization.

APPENDIX E: Government Organizational Structures

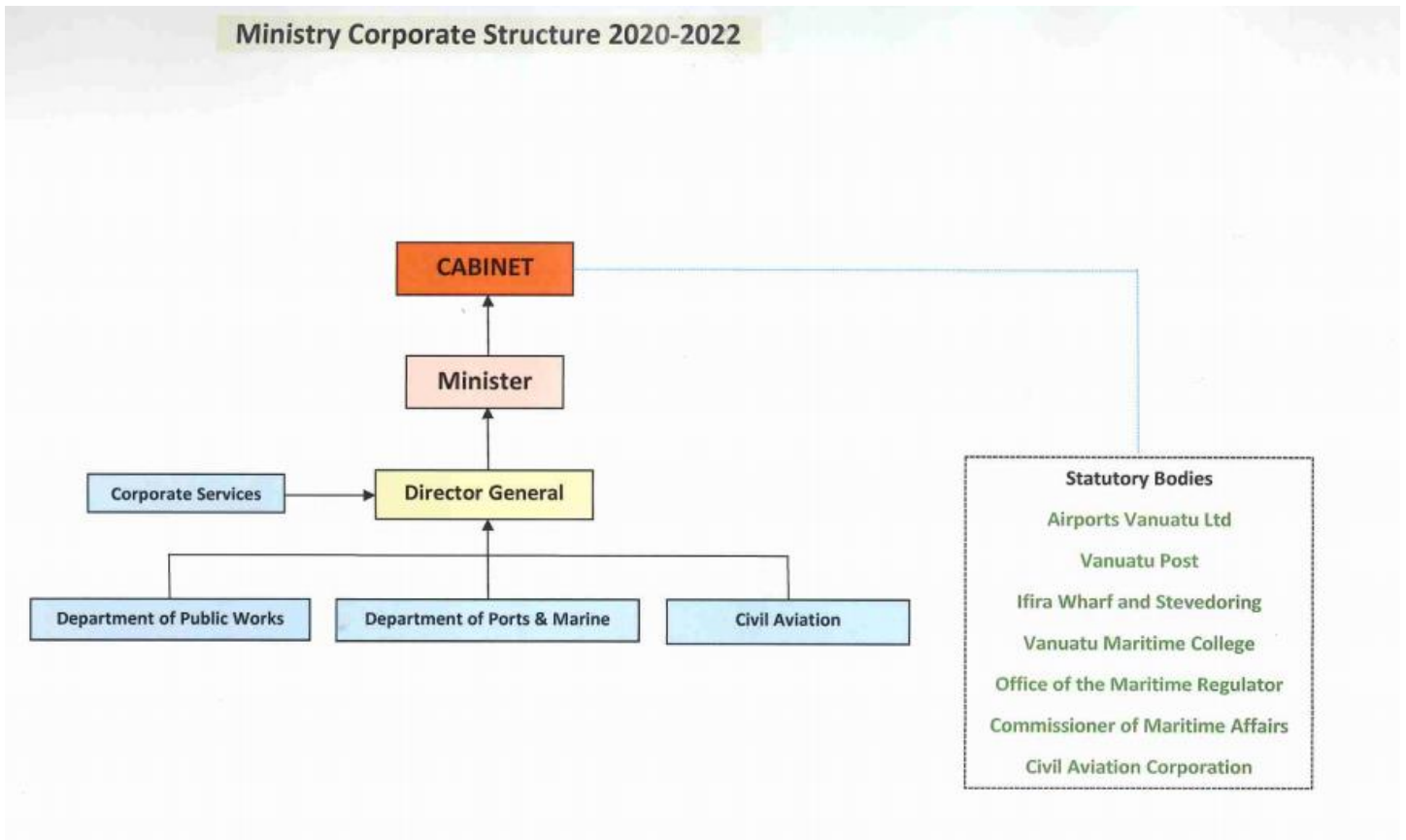


Figure 29 Ministry of Infrastructure and Public Utilities Organizational Structure (GoV 2020)

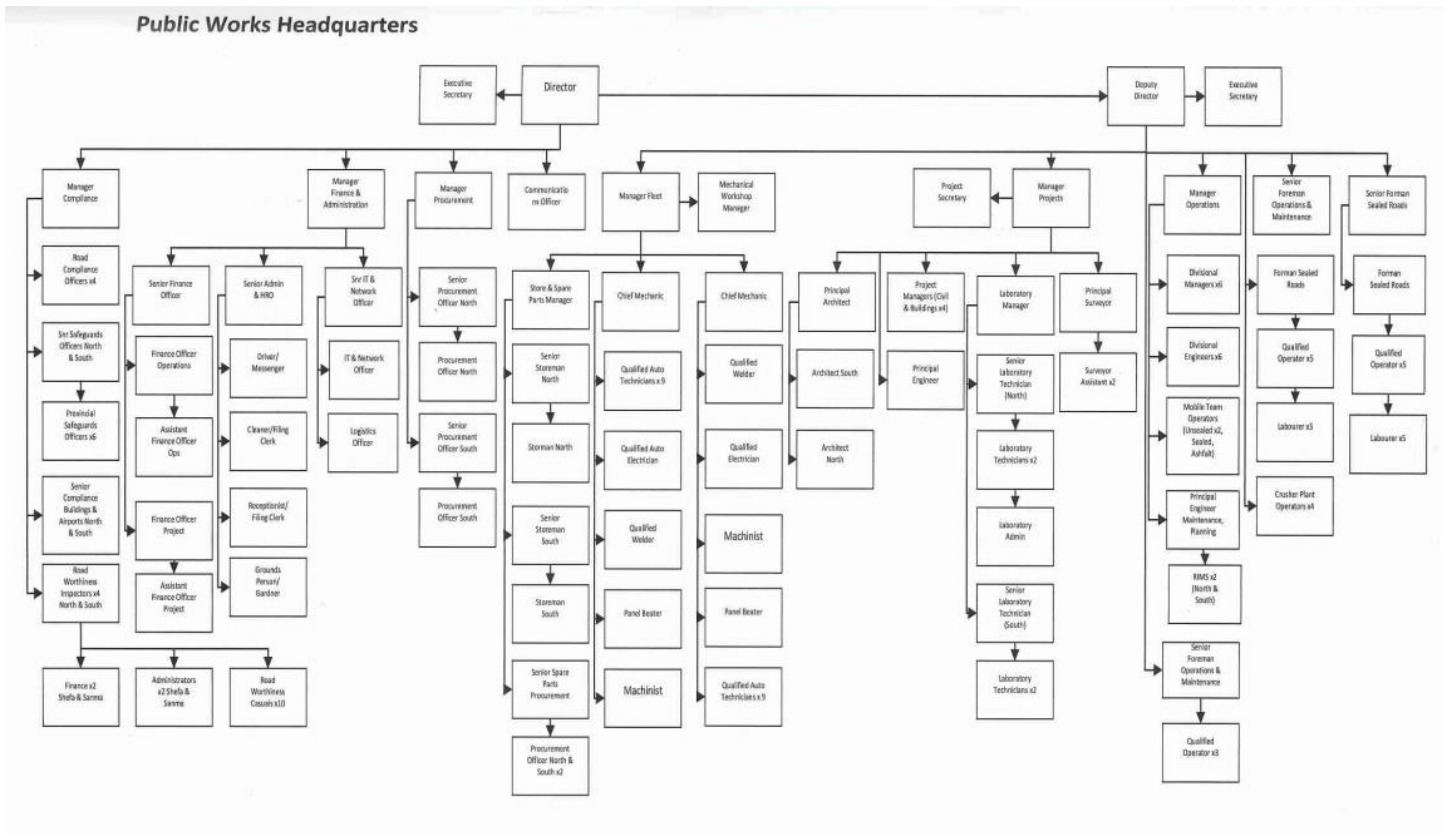


Figure 30: Public Works Department Organizational Structure (GoV 2020)

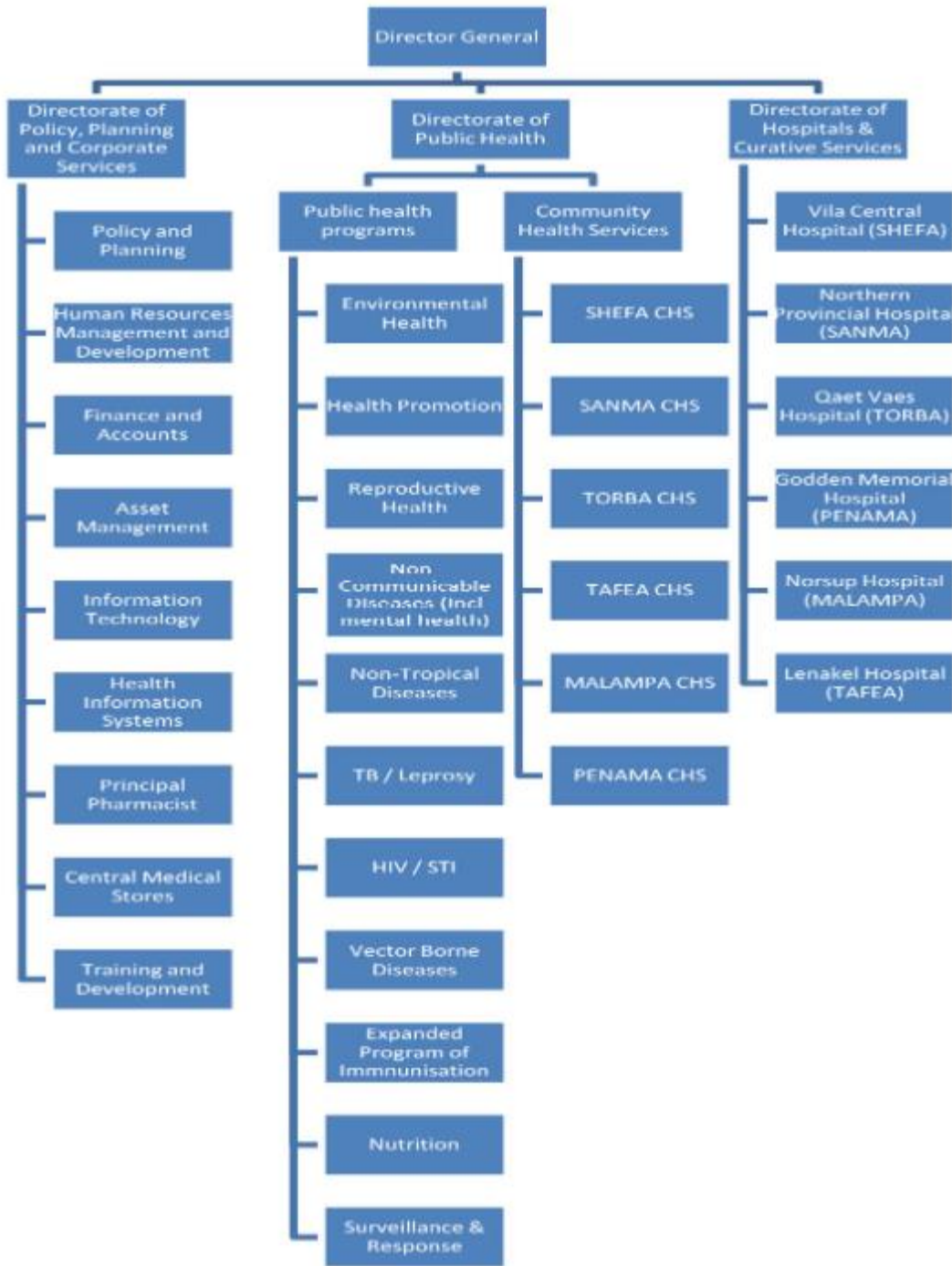


Figure 31: Ministry of Health Organizational Structure (MoH 2018)

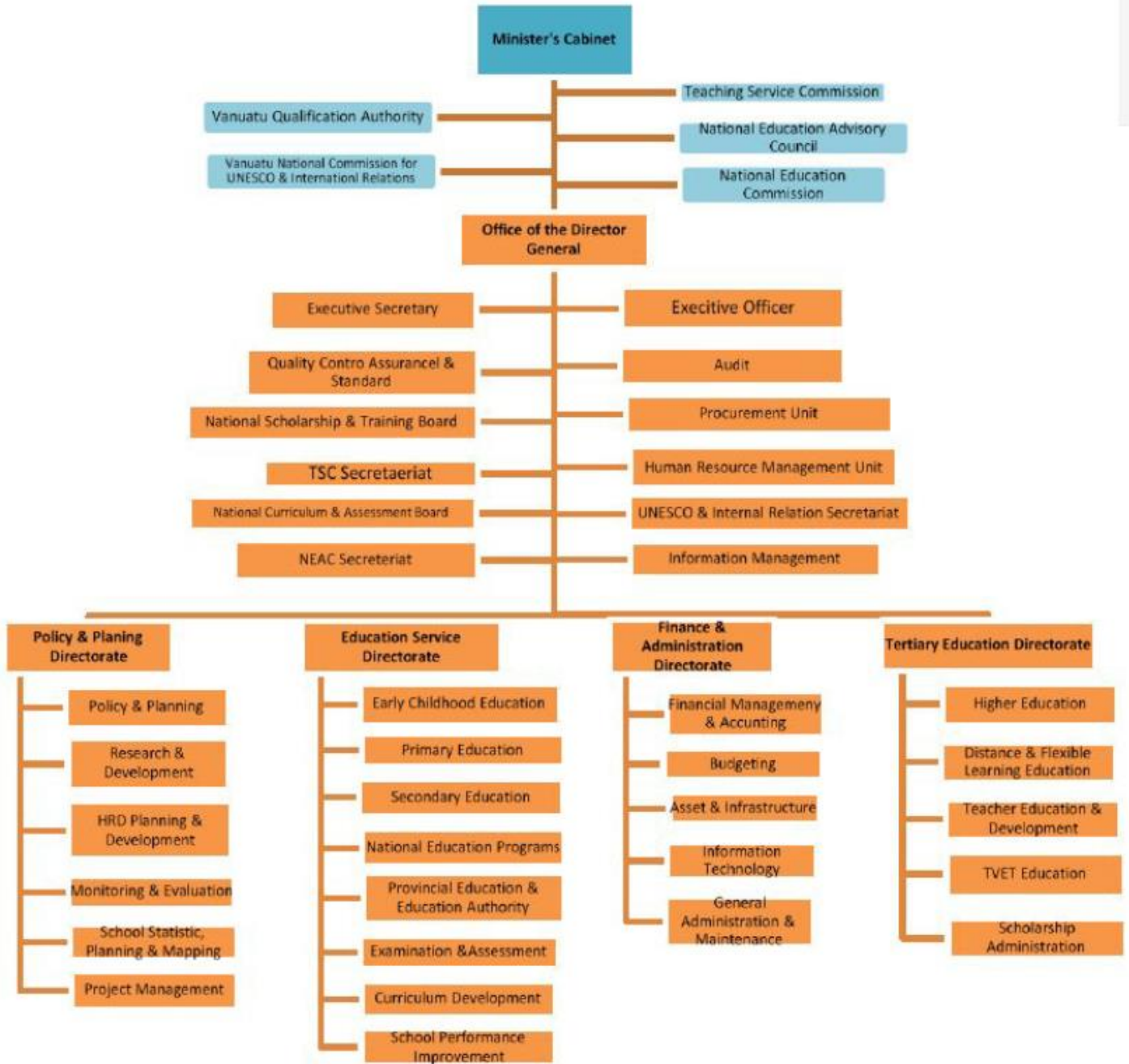


Figure 33: Ministry of Education and Training Organizational Structure (GoV 2015)

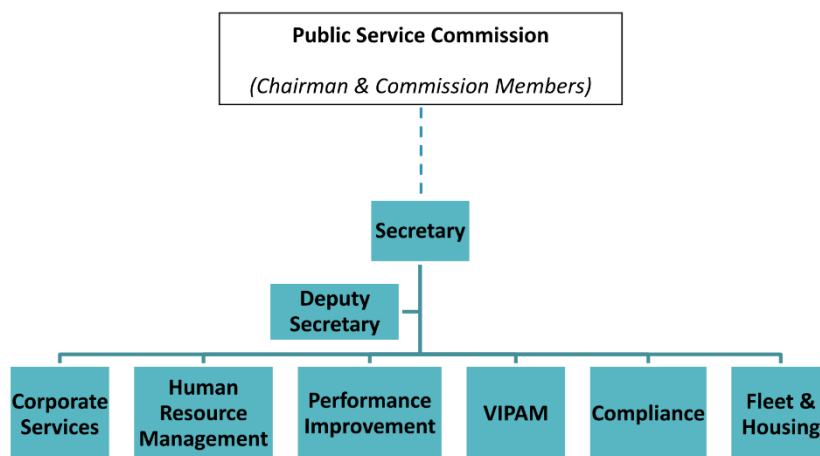


Figure 34: Public Service Commission Organizational Structure (GoV 2020)

REFERENCES

CIR (Vanuatu Customs and Inland Revenue Department). n.d. *Organizational Structure*. CIR. https://customsinlandrevenue.gov.vu/images/diagrams/cir_structure.jpg.

GoV (Government of Vanuatu). 2015. *Ministry of Education and Training Structure*. GoV. <https://education.gov.vu/index.php?id=structure>

GoV. 2020. *Ministry of Infrastructure and Public Utilities Corporate Plan 2020 – 2022*. GoV.

GoV. 2020. *Public Service Commission Corporate Plan 2020 – 2022*. GoV. <https://drive.google.com/file/d/1Ht0jiDH94M6gki3nP1nX60bOHYwebZNT/view>

MoH (Ministry of Health). 2018. *MoH Organizational Structure*. MoH. <https://moh.gov.vu/index.php/pages/moh-organisational-structure>.

APPENDIX F: Driver and Vehicle Licensing Forms

APPLICATION FOR LEARNERS DRIVERS LICENCE

1. FULL NAME:

2. PLACE OF BIRTH:

3. DATE OF BIRTH:

4. HOME ADDRESS:

5. PRESENT ADDRESS:

6. CATEGORY OF VEHICLE FOR WHICH LEARNERS LICENCE REQUIRED:

Motor Cycle of less than 50 cc capacity,

Motor Cycle of more than 50 cc capacity but less than 125 cc capacity,

Motor Cycle of more than 125 cc,

Motor Vehicle,

Heavy Motor Vehicle,

Common Vehicle,

7. PARTICULARS OF ANY OTHER DRIVING LICENCE HELD.
.....

8. HAS THE APPLICANT ALREADY BEEN REFUSED A DRIVING LICENCE?
.....

Date of application:/...../..... Signature:

MEDICAL CERTIFICATE

I, the undersign declare to the best of my knowledge that the applicant does not suffer from any illness or physical handicap which would be likely to cause public danger where he / she is in charge of a Motor Vehicle.

Place of issue:

Date of issue:/...../..... Signature of Medical Officer:

Receipt Number

Figure 35: Learner's license form (GoV n.d)

**DEMANDE DE PERMIS DE CONDUIRE
APPLICATION FOR DRIVING LICENCE**


ROAD TRAFFIC CONTROL ACT CAP 29

TIN NO:

DL NO:

1. Nom de Requérant
Name of Applicant.....
2. Adresse du Requérant
Address of Applicant.....
3. Date de Naissance
Date of Birth.....
4. Taille
Height.....
5. Couleur des Yeux
Colour of Eyes.....
6. Couleur des Cheveux
Colour of Hair.....
7. Catégorie de permis de demande
Category of permit required
 - Motocyclette de moins de 50 cc
Motor Cycle less than 50cc Capacity
 - Motocyclette entre 50 cc et 125 cc
Motor Cycle more than 50 cc but less than 125 cc
 - Motocyclette de 125 cc et plus
Motor Cycle of more than 125 cc
 - Voiture de Tourisme
Motor Vehicle
 - Poids Lourds
Heavy Motor Vehicle
 - Véhicules de Transport en Commun
Common Vehicle
8. Renseignement sur les permis extérieurs au territoire par le requérant
Particulars of the Driving Licence.....
9. Le requérant a-t-il déjà fait l'objet d'un retrait de permis de conduire?
Has the Applicant already been refused a driving licence?.....

Figure 36: Driver's license form (GoV n.d)

<p>Department of Customs and Inland Revenue Taxpayer Services Private Mail Bag 9012, Port Vila, Vanuatu Telephone: (678) 33090 / 33091 or VoIP 2317 Email: irtps@vanuatu.gov.vu Website: https://customsinlandrevenue.gov.vu</p>	 <p>V A N U A T U CUSTOMS & INLAND REVENUE SERVICE DE LA DOUANE ET DES CONTRIBUTIONS INDIRECTES</p>
---	---

TO: The Director of Customs and Inland Revenue NO:

FIRST REGISTRATION OF A MOTOR VEHICLE TIN: _____

1. Name of Owner: _____ Date of birth: _____

2. Address of Owner: _____ Telephone no: _____

3. Vehicle Make: _____

4. Date of Manufacture: _____

5. Type of Vehicle: _____

6. Method of Propulsion: _____

7. Color: _____

8. Chassis Number: _____

9. Engine Number: _____

10. Horse Power [Engine Capacity]: _____

11. Number of Cylinders: _____

12. Weight. : (a) Unladen: _____
: (b) Laden: _____

13. Maximum Authorized Number of Passengers (Including Driver): _____

14. Date of Import: _____

15. Date of Purchase: _____

16. Statistical Value as per Customs SAD Form: Vatu: _____
(Please attached copy of Customs SAD Form entry)

17. Actual Retail Price Paid for the Vehicle: Vatu: _____

Figure 37: Vehicle registration form (GoV n.d)

REFERENCES

GoV (Government of Vanuatu). N.d. Learner's license form. <https://police.gov.vu/downloads/file/18-application-for-driving-license>

GoV (Government of Vanuatu). N.d. Driver's license form. <https://police.gov.vu/downloads/file/18-application-for-driving-license>

GoV (Government of Vanuatu). N.d. Vehicle registration form. <https://police.gov.vu/downloads/file/18-application-for-driving-license>

APPENDIX G: Data for Road Incident Visualization Evaluation and Reporting

G.1 BACKGROUND

Road crash deaths and injuries produce major human, social, and economic losses, especially in low- and middle-income countries, which suffer 90 percent of the deaths. These losses contribute to poverty at the national level by limiting economic growth, and at the individual level by driving families into poverty through the death or disability of the breadwinner.

Most World Bank counterparts, especially in low- and middle-income countries, do not have centralized, geospatial crash reporting systems, which prevents governments from conducting the most basic level of analysis for blackspot identification and prioritization. Sound data are generally lacking, not just in terms of geocoding of crash location, but also in omissions of serious injury data. For example, for some countries with the greatest challenges in crash data the estimated numbers of road crash deaths according to the World Health Organization (WHO) are up to 10 times higher than the official national figures. In other countries, in addition to missing crashes and deaths, crash locations are only recorded within road sections that may be several kilometres long, making effective location of crashes for remedial treatment purposes impossible.

Originally in response to the substantial road safety losses occurring in the Philippines each year and the absence of sound crash data, the World Bank, working with the Government of the Philippines, developed and is well underway in the deployment of a web-based and open-source system for geo-spatially recording and analysing road crashes – the Data for Road Incident Visualization Evaluation and Reporting (DRIVER) system.

DRIVER can link multiple agencies involved in recording road crash data (that is, local government units, the police, and the health system), standardizes terms and definitions for reporting, as well as provides analytical tools to support data-driven investments and policies and monitoring the impact of interventions. Thus, DRIVER can be used to support advocacy for road safety, improve the ownership of the road crash problem by governments by linking relevant agencies and supporting their roles in addressing the problem, as well as help to evaluate early wins and celebrate successes aimed at improving the sustainability of road safety actions through a public interface that is customizable by the entity responsible for reporting.

G.2 KEY FEATURES OF DRIVER

- Web-based and open-source system
- Allows geo-spatial recording and analysis of road crash data
- Readily applicable to many countries, states, or cities (wherever Open Street Map is available)
- The code is available for free on the World Bank GitHub open source code repository: <https://github.com/WorldBank-Transport/DRIVER>
- Fields/variables to be collected and entered are readily modified (at small cost – much less than the cost of proprietary systems)
- To date, the platform is available in English, French, Spanish, Portuguese, Russian, Chinese, Arabic, Bangali, Thai, Laotian, and Vietnamese – Philippines link: roadsafety.gov.ph; Sample demo links: roadsafety.io (Hanoi); brazil.roadsafety.io (Fortaleza); bangladesh.roadsafety.io (Dhaka).

G.3 OPPORTUNITIES AND BENEFITS

The DRIVER platform can be used by municipal, state/provincial, and national agencies involved in the collection, collation and management, analysis, reporting, as well as use of road crash data to improve policy and budget allocation decision making, planning and engineering solutions, deployment of enforcement, as well as other road safety interventions. The system benefits agents tasked with collecting incident data by easing the entry of necessary fields such as simple drop-down menus and linkage with web-based services, such as a weather database, reduce the time necessary to enter information in the field. As previously discussed, perhaps the most crucial piece of data—geo-referencing—allow users to greatly improve the accuracy of location data by dropping a pin onto a cached map in the field or adjusting it as necessary away from the scene of the incident. DRIVER also significantly reduces the burden of collating and managing paper records, which is the norm for many Traffic Police stations around the world. With electronic files, substantial opportunities are presented to the relevant authorities tasked with analysing crash data, which otherwise may not be possible. The platform is also conveniently designed to support inter-agency sharing of data, namely between the Traffic Police and the health sector and has a mechanism to check and reconcile potential duplication of entries. Government agencies responsible with reporting data both within their agency, between agencies, and to the public can customize controls for data sharing as well as providing a public interface to share information on hazardous areas and successes of road safety interventions. Finally, DRIVER can play a significant role in the planning and engineering solutions related to the design of road safety infrastructure. In the medium- to long-term, road safety engineers can also use DRIVER to evaluate the effectiveness of the implementation of their proposed countermeasures.

G.4 EXPERIENCES IMPLEMENTING DRIVER – A BRIEF OVERVIEW

The World Bank has been supporting knowledge sharing of DRIVER in several countries and cities, including the Philippines, Vietnam, Bangladesh, Laos, Thailand and Saudi Arabia as well as Fortaleza, Sao Paulo, and Accra. In these countries and cities, half-day workshops to educate stakeholders on the opportunities that exist through DRIVER and full dedicated support from the Bank on operationalization has been delivered in the previous two years.

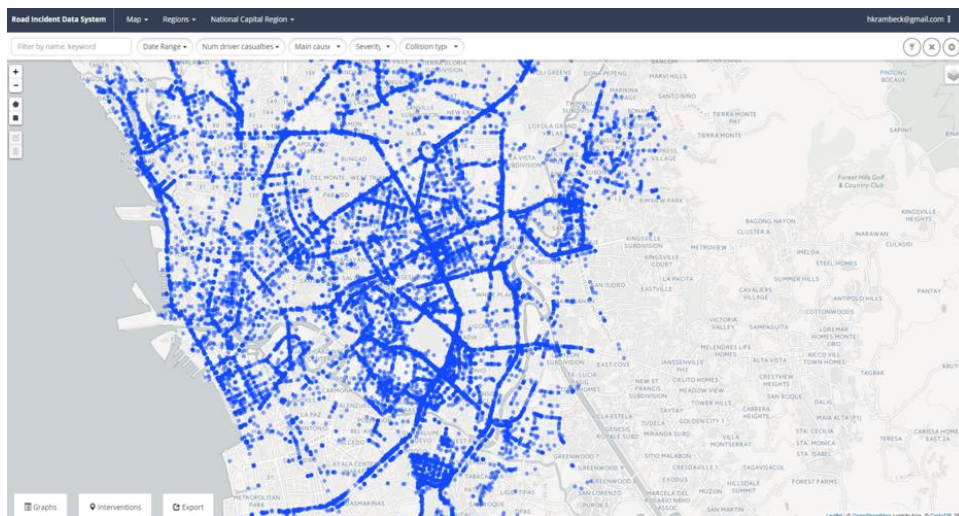


Figure 38: Screenshot of Data for Road Incident Visualization Evaluation and Reporting system map in the Philippines (<https://roadsafety.gov.ph/>)

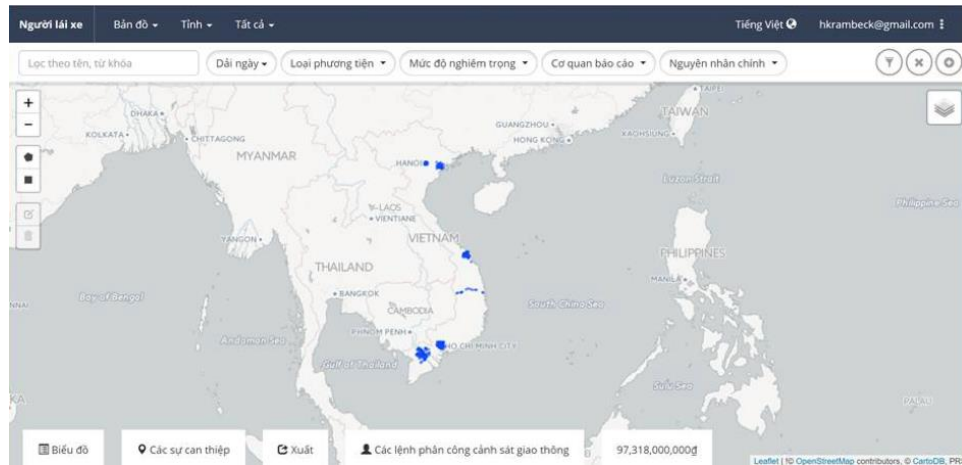


Figure 39: Screenshot of Data for Road Incident Visualization Evaluation and Reporting map from a demo in Vietnam (<https://vietnam.roadsafety.io/>)

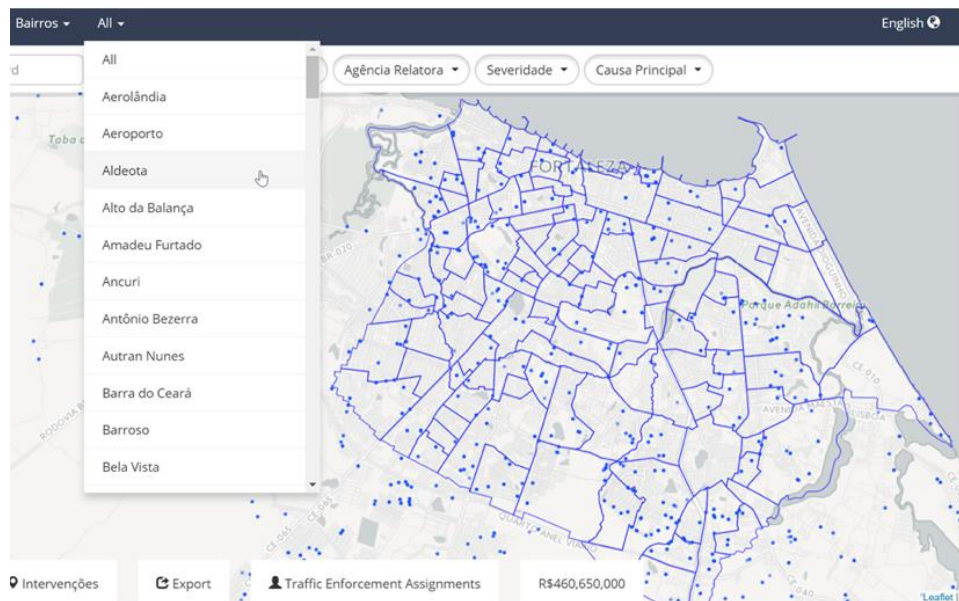


Figure 40: Screenshot of Data for Road Incident Visualization Evaluation and Reporting R map from a demo in Fortaleza, Brazil (<https://brazil.roadsafety.io/>)