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Targeted review of the adventure activities regulatory regime

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About this review

On 9 December 2019 Whakaari/White Island erupted. Forty-seven people were present on the island as part of guided tours. The eruption left 22 people dead and 25 with serious injuries.

Following this tragedy, the Minister for Workplace Relations and Safety directed the Ministry of Business, Innovation & Employment (MBIE) to undertake a targeted review of the adventure activities regulatory regime. This review was conducted between August and November 2020¹ and considered whether weaknesses exist in the regime where adventure activities take place in naturally hazardous environments. The review examines both regulatory settings and the roles and responsibilities of organisations involved in the implementation of the regime.

This review is separate from the coronial and WorkSafe NZ investigations into the circumstances of the eruption and related deaths and potential breaches of the law.

Scope and methodology

This targeted review considers whether weaknesses exist in the adventure activities regulatory regime where adventure activities take place in naturally hazardous environments. The objectives of the review are to reduce the risk of harm from natural hazards, avoid having a chilling effect on the adventure activities sector, and avoid significantly impacting public access to New Zealand's natural environment.

Specific questions examined by the review include:

- To what extent do adventure activities in New Zealand experience risks from natural hazards? What activities face risks of catastrophic harm if natural hazards are not managed appropriately?
- How does the adventure activities regulatory regime operate to manage risks where activities intersect with natural hazards? What are the roles and responsibilities of the actors involved in the regime (WorkSafe, auditors and operators) to identify and manage these hazards?
- Is anything missing from the adventure activities regulatory regime that increases the chance of catastrophic events occurring when adventure activities operate on/near natural hazards? Are more specific roles or specific controls for the management of natural hazard risks needed?

The definition of “adventure activity” is laid out in regulation 4 of the Health and Safety at Work (Adventure Activities) Regulations 2016. It is an activity—

- i) that is provided to a participant in return for payment; and*
- ii) that is land-based or water-based; and*
- iii) that involves the participant being guided, taught how, or assisted to participate in the activity; and*
- iv) the main purpose of which is the recreational or educational experience of the participant; and*
- v) that is designed to deliberately expose the participant to a serious risk to his or her health and safety that must be managed by the provider of the activity; and*

¹ The review was delayed as Government prioritised resources towards the response to COVID-19

- vi) *in which— failure of the provider’s management systems (such as failure of operational procedures or failure to provide reliable equipment) is likely to result in a serious risk to the participant’s health and safety; or the participant is deliberately exposed to dangerous terrain or dangerous waters.*

This review was conducted through three streams:

- First, a sizing exercise was undertaken to understand how many registered adventure activities currently intersect with natural hazards. Analysis was undertaken of the register of adventure activities operators² and cross-referenced with information on operator websites to identify where adventure activities intersect with natural hazards. Relevant natural hazards were identified and segmented according to a natural hazard risk framework developed in consultation with the Department of Conservation (DOC), GNS Science (GNS) and WorkSafe New Zealand (WorkSafe). Officials have also drawn on DOC’s framework for managing visitor risk from natural hazards in the conservation estate.
- Secondly, a mapping exercise was undertaken to identify the key actors and relationships in the adventure activities regulatory regime. An illustration of these actors and relationships is presented in **Annex Two**. This included a review of activity safety guidelines, safety management templates, the Safety Audit Standard for Adventure Activities and documentation obtained from WorkSafe relating to their administration, oversight and enforcement of the regime.
- Finally, structured interviews were undertaken with key stakeholders involved in the regime. Interviews were conducted with the regulator (WorkSafe NZ), the accreditation body (Joint Accreditation System of Australia and New Zealand (JAS-ANZ)), the certifying bodies (Integra and Qualworx) and lead industry bodies (Tourism Industry Aotearoa (TIA) and Recreation Aotearoa).³ These interviews were designed to test findings from streams one and two using a thematic analysis technique.

Collectively, this work provides an overview of the relationship between adventure activities and natural hazards, the current state of the regulatory regime, and the practical operation of adventure activities and application of the regulations to inform findings.

² Register is available at <https://register.worksafe.govt.nz/>

³ Due to the targeted nature of this review, consultation was not undertaken with adventure activity operators. Any subsequent consultation on changes to the regime will include operators.

Context

The regulations

The *Health and Safety in Employment (Adventure Activities) Regulations 2011* were introduced to address widespread concern over the management of risk in the adventure tourism sector and to reduce perceived damage to New Zealand's reputation as an international visitor destination. Following an extended implementation phase, the regime was brought fully into force in November 2014.⁴ The introduction of the regulations involved a significant amount of government and industry effort, and effectively resulted in a complete reorganisation of the adventure tourism sector.⁵

The present version of the regulations, the *Health and Safety at Work (Adventure Activities) Regulations 2016* (the Adventure Activities Regulations), were introduced to transfer the regime under the newly introduced *Health and Safety at Work Act 2015* (HSW Act).

New Zealand is an outlier amongst other jurisdictions in providing sector-specific regulations that require operators to register their adventure activity operations. These requirements provide an additional layer of regulatory oversight in comparison to most international jurisdictions. The United Kingdom regulates adventure activities but in a limited way (targeted at young people), and this system is currently under review. Australia has adopted a voluntary standards system, supported by operator liability under general contract, negligence and health and safety laws.⁶ Many other jurisdictions also avoid specifically regulating the adventure activities sector as their contract and negligence laws make operators liable for personal injuries to customers. In New Zealand, contract and negligence laws do not provide the same incentive on operators to ensure safety, due to the Accident Compensation Corporation (ACC) scheme limiting operators' potential liabilities for personal injury.

The regulatory regime and requirements

Safety in the adventure activities sector is primarily regulated through the HSW Act and the Adventure Activities Regulations.

The HSW Act sets out general health and safety obligations for all persons conducting a business or undertaking in New Zealand. The primary duty under the HSW Act is for all businesses to ensure, so far as is reasonably practicable, that the safety of workers and other persons is not put at risk as a result of work activities. This includes ensuring the equipment they provide is safe and that workers have the necessary training to manage the risks of their operation.

Sector-specific requirements for adventure activities are provided through the Adventure Activities Regulations. These regulations require all adventure activity operators to pass an audit of their safety management systems at least every three years and register their operations with WorkSafe. The Adventure Activities Regulations make it an offence for operators to provide or offer to provide an adventure activity unless registered.

⁴ With the exception of the accreditation scheme for certifying bodies, which was introduced in late 2015.

⁵ Funding of around \$1,000,000 from the Department of Labour and WorkSafe was used to develop capability in certifying bodies and to resource the development of activity safety guidelines.

⁶ In Queensland, legislation also provides specific duties for safety in recreational water activities, such as diving and snorkelling.

WorkSafe acts as the primary regulator of the HSW Act and Adventure Activities Regulations. The Ministry of Business Innovation and Employment (MBIE) is responsible for administering, monitoring and evaluating the HSW Act and Adventure Activities Regulations, and for monitoring WorkSafe's performance as regulator of this legislation.

Operator audits are conducted by independent certifying bodies against a safety audit standard published by WorkSafe. The safety audit standard sets out the requirements for operators in their delivery of adventure activities and their overall safety management system.

TIA and Recreation Aotearoa support the adventure tourism and commercial outdoor recreation sector to manage their health and safety obligations, through the management of the SupportAdventure.co.nz website. This website provides a range of resources (including good practice materials, adventure safety guidelines, safety management system templates, and examples) and is endorsed by WorkSafe.

WorkSafe authorises certifying bodies to carry out audits where certifiers hold accreditation from JAS-ANZ. The New Zealand Adventure Activity Certification Scheme (the certification scheme) establishes the requirements for how certifying bodies are required to perform their auditing, certification and monitoring functions. It is the primary way that a certification body can demonstrate to WorkSafe that it meets the criteria in the regulations to be recognised as a safety auditor.

In addition to these requirements, transport legislation establishes safety requirements for the land, air and marine transport aspects of operations. Certain activities, such as adventure aviation and jet boating, are regulated under transport rules rather than the Adventure Activities Regulations.

The adventure activities sector

The adventure activities sector ranges from 300 to 330 operators offering more than 60 different types of adventure activities.⁷ Registered operators provide activities across New Zealand, with concentrations in popular tourist destinations like Rotorua, the Central Plateau and Queenstown Lakes District. Operators range in size from single person operations to large enterprises. Consultation with stakeholders suggests business acumen across the sector is mixed and profit margins are tight, with operators frequently expressing price sensitivity over the safety audit.⁸ A number of registered operators are charitable or not-for-profit businesses.

The sector is split roughly equally between commercial tourism operators offering adventure activities predominantly to the international tourist market and recreational operators offering activities to educational providers and other domestic recreational groups. This split is reflected in the two main industry bodies representing the sector (TIA and Recreation Aotearoa).

Prior to the COVID-19 pandemic, international tourism has been an important export earner for New Zealand, contributing \$17.2 billion, or 20 per cent of export earnings in 2019. The industries accounting for the largest proportion of tourism jobs include accommodation, food and beverage, and rental and recreation services. In the year to June 2011, domestic and international tourists who took part in at least one adventure tourism activity spent \$4.1

⁷ Numbers of registered operators fluctuate as operations are created or disestablished.

⁸ In 2016, WorkSafe commissioned a performance study of the Adventure Activities Certification Scheme (available at worksafe.govt.nz/topic-and-industry/adventure-activities/documents-and-resources/). This report found that the cost of an audit was \$1300-1800 per auditor per day of audit activity. Engagement with stakeholders suggests the average cost of a full audit is around \$5000.

billion on their New Zealand holiday. In the same year, 36 per cent of international tourists took part in at least one adventure tourism activity while in New Zealand.

The impact of COVID-19 on the tourism sector has been significant. In New Zealand, the economic losses in tourism are expected to be deeper and the recovery slower than the overall economy, with firm closures and job losses. The government has responded to the challenges of COVID-19 with a focus on saving strategic tourism assets and building the sector back better, initially through stimulating domestic tourism demand, and over the longer term offering higher-value products and targeting higher-spend customer segments. There is the potential for the international visitor market to recover quickly once borders reopen, as New Zealand's effective management of COVID-19 may contribute to the perception of New Zealand as a "safe" destination in the pandemic context. Visitors expect high-quality and safe adventure activities, and this sector is well positioned to support the sector to rebuild.

Review findings

The regulatory regime has improved safety standards

Based on a qualitative assessment, officials consider that in many respects the regime is working well and supporting the policy objective of increasing safety standards in the adventure activity sector. That the regime is driving improvements to operator safety management has also come through as a key message in stakeholder consultation.

Since the Adventure Activities Regulations have been implemented, fatality numbers in the sector appear to have reduced. Thirty-one deaths occurred in the sector in the five years prior to the Department of Labour's review of incidents in the adventure and outdoor commercial sector (2004-2009). Between 2014 (when the regime came fully into effect) and December 2019, there were eight deaths in these regulated adventure activities (excluding the Whakaari/White Island event). During the period 2009-2019 New Zealand's tourism sector had grown by more than 55 per cent.

However, catastrophic events have historically occurred in the adventure tourism sector on a sporadic basis.⁹ The Whakaari/White Island event suggests catastrophic events may continue to periodically occur in the sector, despite the adventure activities regime.

This sporadic occurrence of catastrophic events has much to do with the nature of adventure activities, which are defined by the deliberate exposure of a participant to serious risk to their health and safety, as well as the group make-up of many of the activities. While strengthening safety standards in the regime (both for natural hazards and more generally) will help decrease these inherent risks, risks of catastrophic harm cannot be eliminated entirely. Further trend analysis over a longer time period will be needed before we can fully understand the impact of the regime on the frequency and severity of catastrophic events.

Due to the newness of the regime a full impact evaluation has not yet been conducted. However a 2016 performance study of the adventure activities certification scheme concluded

⁹ For instance, Mangatepopo Gorge tragedy in 2008 with 7 fatalities, the Carterton hot-air ballooning tragedy in 2012 with 11 fatalities and Whakaari/White Island eruption in 2019 with 22 fatalities and 25 people with serious injuries. While only the last of these incidents involved operators subject to the Adventure Activities Regulations, these events give an indication of incidences of catastrophic events in the adventure tourism sector.

the scheme had improved safety management in the sector, though there was room for further refinement.¹⁰

While the regime appears to have improved safety standards generally, additional research to test the performance of the regime against policy objectives and examine trends of catastrophic harm would be of value.

The legislative framework is working as intended

The review did not identify significant issues with the legislative framework of the adventure activities regime. The Adventure Activities Regulations appear to adequately support the compulsory operator registration and third party auditing regime. The obligations on operators to become registered and the procedural mechanisms to support auditing and registration are clearly set out in the regulations. Through the enforcement powers of the Health and Safety at Work Act, the regulator has a suite of options to address any non-compliance.

Natural hazard risks are pervasive across the adventure activity sector

Refer to **Annex 1** for definitions of individual natural hazards and an overview of natural hazard risk analysis.

Natural hazard risks are, for the purposes of this review, defined as physical, quick-onset natural events with a degree of localised impact with the potential to lead to fatalities. Indicative analysis shows that almost all registered adventure activities intersect with natural hazard risks in some way (665 out of 667 registered activities). Of 312 registered operators, 311 manage natural hazard risks in their operations.

The indicative analysis outlined in Annex 1 has identified 12 natural hazard risks intersecting with registered adventure activities.¹¹ Earthquakes were excluded from the scope of the review as they can occur on such a large scale that participating in an adventure activity would not significantly increase an individual's exposure to the risk due to ground shaking, whereas other kinds of natural hazards such as extreme weather events can have more localised impact. Several consequent natural hazard risks that can arise as a result of earthquakes, such as tsunamis and rockfall, are included in the analysis.

The results suggest that all identified natural hazards have some inherent risk of causing catastrophic harm (a single event with more than five fatalities). The degree and type of risk varies according to the type of natural hazard and the nature and location of activities taking place. This risk can be managed, to varying degrees, through a number of measures, such as administrative controls, engineering controls and limiting exposure time to hazards. However, many activities will inherently have some residual risk from natural hazards. The 2008 Mangatepopo Gorge tragedy and 2019 Whakaari/White Island eruption demonstrate the significant impacts such residual natural hazard risks can have.¹²

¹⁰ Galloway (2016) *New Zealand Adventure Activities Certification Scheme: A Performance Study*, worksafe.govt.nz/topic-and-industry/adventure-activities/documents-and-resources/.

¹¹ Extreme weather events, water surge, flooding in enclosed spaces, surface flooding, rockfall, landslide, snow avalanche, icefall avalanche, rapids, collapse of natural structures, volcanic eruptions and, geothermal hazards.

¹² The Mangatepopo Gorge tragedy in 2008 occurred when a group were in the gorge during flash flooding, and resulted in 7 fatalities. The Whakaari/White Island tragedy in 2019 resulted in 22 fatalities and 25 people with serious injuries when the volcano erupted with four groups on the island.

The indicative natural hazard risk results show:

- Landslides, icefall avalanches, water surges, active or potentially active volcanic vents, geothermal activity and flooding in enclosed spaces have **medium to high** inherent risk of causing catastrophic harm. On average, 146 registered activities intersect with medium to high risk natural hazards.
- Collapse of natural structures, extreme weather events, rockfall and snow avalanche have **low to medium** inherent risk of causing catastrophic harm. On average, 446 registered activities intersect with low to medium risk natural hazards.
- Surface flooding and rapids have **low** inherent risk of causing catastrophic harm. On average, 73 registered activities intersect with low risk natural hazards.

The risk of catastrophic harm associated with natural hazards is not limited to the adventure activity sector. Natural hazards create risks in many sectors when work or leisure activity takes place outdoors, for example; the tourism or forestry and other land or sea-based sectors. Given the pervasiveness of natural hazards as part of New Zealand's geography, it may be that other sectors also require a greater level of attention around natural hazard identification and management. This question has not been addressed as part of the targeted review.

The review has identified strengths, but also areas for improvement

Refer to **Annex 2** for a depiction of the adventure activities regulatory regime.

The regulatory leadership role of WorkSafe could be strengthened

The functions outlined in the Adventure Activities Regulations and the *WorkSafe New Zealand Act 2013* allows WorkSafe to have a strong role in supporting the implementation of the regime. However, in practice these functions have not been used to their full effect.

WorkSafe's regulatory leadership role in the regime could be strengthened.

A key theme from stakeholders was that WorkSafe has had little direct oversight of how operators are performing, relying instead on auditors to identify issues. A general lack of engagement and enforcement activity by WorkSafe was also noted.

Key organisations involved in implementation consider they have been acting beyond their formal roles to support the regime. TIA considers it has been acting beyond its remit in identifying and convening expert groups to develop activity safety guidelines, and requires funding support if it is to continue to provide these additional functions. JAS-ANZ similarly noted it has been called upon to contribute to the scheme beyond its function as an accreditation body, and that continuing to develop the scheme is the responsibility of the regulator. If these organisations reduce their activities to their formal roles this may create gaps in the regime around the provision of guidance to operators and administration of certifying bodies. **Annex 4** provides further information on stakeholder views.

WorkSafe documentation suggests that the adventure activity regime is a low priority for organisational resourcing, in large part because of its low rate of harm in comparison to other sectors and the additional assurance that comes from the safety audit process. Limited resources have been allocated to monitoring, engagement and enforcement activity in the adventure activity sector. This low prioritisation of the regime appears to have given rise to administrative errors¹³ and shows a preference for ongoing engagement with operators over enforcement in some cases.¹⁴

In response to the Whakaari/White Island event, WorkSafe have proactively undertaken an internal health check considering the registration, monitoring and enforcement aspects of their implementation of the adventure activities regime. This health check concluded that WorkSafe needs to recommit to its regulatory leadership role and strengthen how it administers the regime. WorkSafe have now commenced a programme of work to address the areas of weakness identified by the health check. MBIE are supportive of this programme of work, and will continue to work alongside WorkSafe to monitor the impact this work has on the performance of the regime.

¹³ An example of administrative error can be seen in WorkSafe's authorisation of certifying bodies to conduct adventure activity audits lapsing between January 2019 and March 2020. Audits conducted during this time needed to be later reconfirmed.

¹⁴ WorkSafe is yet to undertake any prosecutions under the *Health and Safety at Work (Adventure Activities) Regulations 2016* and between 2014 and 2019 undertook 18 investigations involving adventure activities operators, three of which resulted in enforcement activities. A preference for engagement over enforcement appears observable in WorkSafe's interactions with unregistered helicopter operators providing ground tours of Whakaari/White Island. Ongoing engagement between WorkSafe and these operators on their need to register occurred between November 2017 and November 2019, without formal enforcement action occurring.

A summary of the findings of WorkSafe’s internal health check is available in **Annex 5**.

A more effective regulatory leadership role by WorkSafe will provide greater oversight of the adventure activities sector and greater assurance that safety standards are being met. Improved leadership will also provide greater guidance to operators about expected safety standards, providing increased support for them to improve their own practices.

Increasing the safety audit standard’s focus on natural hazards

The safety audit standard is the cornerstone of the regime. This standard sets requirements for adventure activity operators’ safety management systems and is the standard operators are audited against. WorkSafe is responsible for developing, reviewing and publishing the safety audit standard.

The safety audit standard is a generic health and safety standard with some content specific to the adventure activities sector. The safety audit standard was developed in New Zealand with input from the adventure activity sector. By comparison to the certification scheme and the activity safety guidelines, there is little detail in the standard to support operators in developing their safety management systems. Risk and hazard management is discussed at a high-level, with little tailoring to take into account the pervasiveness of natural hazard risks (weather events are the only natural hazard risk referred to in the audit standard). It was expected at the start of the certification scheme that a full set of adventure activity safety guidelines would be developed to support the implementation of the safety audit standard. Currently, there are 12 activity safety guidelines available.

The generic nature of the safety audit standard means requirements can apply broadly across the full range of adventure activities, with related cost efficiencies for the audit process. However, some stakeholders consider it can lead to a ‘cookie-cutter’ approach to the development of safety management systems, where operators adopt template approaches rather than develop systems tailored to their particular circumstances. Other relevant standards have been held up as possible alternatives to the current safety audit standard. For example, the International Organisation for Standardisation (ISO) 45001:2018 standard *Occupational Health and Safety Management*, or ISO 21101:2014 *Adventure Tourism – Safety Management Systems*.

Stakeholders have suggested that operators’ understanding of natural hazard risks is patchy and greater attention to these in the regime would be beneficial. Increased communication of natural hazard risk to staff and customers and managerial responsibility for cancelling activities based on natural hazard risk were highlighted as areas for improvement.

Additions to the safety audit standard to strengthen requirements for dynamic management of natural hazard risks will improve practices. Additions could include:

- **Specific requirements relating to natural hazard management** in the risk and hazard management section of the safety standard. Operators could be required to identify the number and types of natural hazard risks their activities intersect with and assess their level of risk. Operators would be expected to consider the risk management measures they would put in place to mitigate natural hazard risk. A competent technical advisor would be required for this assessment.
- **Increased emphasis on natural hazard risks** in the emergency preparedness and response plans section of the safety standard. Here operators would be required to consider natural hazard emergencies and response plans based on types of natural hazard risks their activities intersect with, and related catastrophic harm events.
- **Increased emphasis on the communication of natural hazard risks** by the operator to both staff and participants to ensure they are aware of the range of risks they face when undertaking the activity.
- **Managerial responsibility for natural hazard risk management** in the leadership and management section of the safety standard. Here responsibility would be placed at the managerial level on the postponing and cancelling of activities based on the natural hazard risk. This would induce the operator to consider the dynamic management of natural hazard risk through the regular surveying and assessment of available natural hazard data.

Natural hazards can be difficult to assess, and operators often do not have high levels of expertise to interpret data about them. Requirements in the safety audit standard to include technical advisors in risk assessments will address this issue, but may have a commercial impact on operators.

Operators could be supported in natural hazard risk identification and management through the development of guidance materials. Natural hazard risk guidance materials could include maps indicating high-risk natural hazard zones, control measures for reducing risk (e.g. limiting exposure time near hazard), and when natural hazard technical expertise might be required.

While predominantly supporting the adventure activity sector, such guidance materials could also be used to increase awareness around natural hazard risk identification and management more generally.

Operators could be further supported to identify and manage risks from natural hazards through the development of guidance materials. Guidance should first focus on natural hazard risks not covered in current activity safety guidelines (landslides, volcanos, geothermal, collapse and collapse hazards). **Annex 3** provides an outline of how current activity safety guidelines cover natural hazard risks.

Improvements to the adventure activities certification scheme

Safety audits of adventure activity operators are conducted by certifying bodies recognised by WorkSafe. The primary means for a certifying body to demonstrate to WorkSafe they are appropriately qualified to be recognised as a safety auditor is for the body to be accredited by JAS-ANZ under the New Zealand Adventure Activities Certification Scheme.

The certification scheme provides a framework for how certifying bodies are required to conduct their auditing operations, with the aim of ensuring audits are conducted to a consistent methodology and a consistent quality. The scheme was developed jointly by WorkSafe and JAS-ANZ. JAS-ANZ endorses and administers the scheme, and provides accreditation to certifying bodies. WorkSafe, as the regulator of the adventure activities regime, is responsible for recognising safety auditors and supporting, developing and maintaining the certification scheme.

Overall, the certification scheme appears to be working well, with general acceptance from operators that it is supporting improved safety standards. Some stakeholders noted they have been able to work closely with WorkSafe's Adventure Activities Registrar on the implementation of the certification scheme, and that there is effective communication between the registrar, the accreditation body and certifying bodies to discuss and address technical issues as they arise.

Stakeholders consider the on-site safety audits required under the scheme to be the main mechanism to improve operator's safety systems. The certification scheme currently only requires certifying bodies to conduct on-site audits of operators at least once during the three-year certification cycle. While certifying bodies are expected to conduct monitoring of operators in the interim, they are generally given some discretion as to the form this monitoring will take. In practice, this has resulted in certifying bodies frequently adopting off-site, desktop audits as their preferred form of monitoring to minimise costs to operators. This is not optimal from a safety perspective, with some stakeholders noting concerns that operators may improve their safety systems for the on-site audit and may revert to less than optimal safety processes in periods between on-site audits.

The certification scheme could be strengthened by increasing the minimum number of on-site audits conducted. There are a number of ways this could be achieved:

- Operators paying for an additional audit from certifying bodies. This would double the cost of safety audits and, due to operators' price sensitivities, and could drive perverse behaviours with operators becoming non-compliant or trying to evade registration requirements.
- WorkSafe funding (or undertaking) an additional audit. This would have resourcing implications for WorkSafe and may require them to make trade-offs against other priorities or higher risk sectors.
- Increased (and random) inspections of registered operators by WorkSafe. Inspections could be targeted at higher risk operations. This option may also have resourcing or reprioritisation implications for WorkSafe.

The use of technical experts alongside auditors is a strength of the regime. Technical experts are experts in the type of activity being audited, and so are able to assess if the right risks are being identified and managed in the correct way (for example, alpine climbing and avalanche risk or rafting and risk from rapids).

However, given the complexity around understanding the nature and risk of natural hazards and their pervasiveness there is a question whether the right technical experts are looking at the right hazards in all cases. Requirements could be introduced to require certain experts to be consulted where activities are conducted in certain environments (for example, a volcanologist where activities take place in an active volcanic area, or geotechnical engineers where activities take place near unstable cliff faces).

The certification scheme could be strengthened by increasing its focus on technical experts, to ensure the right technical experts for natural hazard management are being engaged in the audit process.

Under the HSW Act, all businesses are required to notify WorkSafe if a notifiable event takes place.¹⁵ “Notifiable events” include fatalities, certain serious injuries and specific incidents that expose workers or others to a serious health and safety risk (regardless of if harm in fact occurs). The definition of notifiable incidents is well suited to man-made risks (for example, including electric shocks, damage or collapse of plant or equipment, ventilation failure in underground tunnels), but are less suited to risks that come from the natural environment. This means that the regulator does not have a clear line of sight over sentinel events that might signal the risk of future catastrophic harm. Examples of sentinel events could include:

- Avalanche catching and/or burying participants but no fatalities or serious injuries occur
- Eruptions or significant landslides occurring in areas where registered activities take place
- Flooding in caving systems where participants are left stranded but where no death or injury occurs
- Off-road vehicles rolling on multiple occasions over a limited time period but not causing injury or death.

There is potential to develop a range of “notifiable events” more suited to the adventure activity sector, providing the regulator greater oversight over the risks experienced by operators. This is likely to require regulatory change.

¹⁵ Section 56 of the HSW Act.

The review has also identified several system-level issues for future consideration

The review has also identified several potential longer-term issues in the design and implementation of the adventure activities regulatory regime. These issues may challenge the long-term sustainability of the regime and limit the extent to which it achieves its objectives.

The regime’s reliance on third party certification bodies may not be sustainable

The regime is reliant on third-party certifying bodies to conduct audits on operators. However, there are indications this independent auditing market may not be commercially sustainable.

When the regime was conceived in 2010-2011, it was anticipated that up to six certifying bodies would provide auditing services to the sector. Only two certifying bodies remain active in the market.

Certifying bodies view adventure activity auditing as a low-reward and high-risk area of business. The small size of the adventure activity sector, the sensitivity of operators to costs and competition in the audit market has resulted in adventure activity auditing carrying a low profit margin for certifying bodies.

If one of the remaining two certifying bodies was to withdraw from providing audits this would place significant pressure on the regime. Operators in remote geographic locations, or with specialist activities may find it difficult to obtain audits. The monopoly position of the remaining certifying body may lead to price increases of safety audits.

Were both remaining certifying bodies to withdraw from the market a significant redesign of the regime would be required, with the regulator likely to be required to take over the operator auditing and certification function. While this does not appear to be an imminent risk, this potential for independent certifiers to cease to be available is a key underlying risk of the current system and should be considered as part of a first-principles review.

The potential for the independent certifier market to collapse is a key underlying risk of the regime.

The current regulatory definition of “adventure activity” is not sufficiently clear

The definition of “adventure activities” requiring operators to register with WorkSafe is set out in regulation 4 of the Adventure Activities Regulations. Key aspects of this definition are that the activity:

- is provided to a participant in return for payment and involves them being guided, assisted or taught how to participate; and
- is designed to deliberately expose the participant to a serious risk to health and safety that must be managed by the provider of the activity; and
- exposes the participant to dangerous terrain or waters, or a situation where a failure of the provider’s management systems (such as a failure to provide reliable equipment) is likely to result in serious risk.

This definition is subject to a range of exceptions, such as activities provided by sports clubs and schools, and activities subject to other regulatory systems (such as maritime transport operations, adventure aviation activities and amusement devices).

A consistent view expressed by stakeholders is that this definition is unclear and in many situations does not provide businesses a clear answer on whether they are required to register as an adventure activity operator. Several key aspects of this definition are considered vague, such as what constitutes “dangerous terrain” and whether operations “deliberately expose” participants to serious risk. WorkSafe has also noted the lack of specificity in this definition has caused operational challenges in providing guidance and establishing whether particular operators should be registered.

The current definition of “adventure activity” may also not cover all activities that pose a similar level of risk to those in the regime. The policy intent of the regime was to require all commercial adventure and outdoors sector activities that provided a significant risk of serious harm to participants to be registered. However, current interpretations of the definition generally exclude several activities that prima facie appear to pose significant risks analogous to those of activities that do require registration, such as horse trekking and alpine hunting.¹⁶

Additionally, the current definition may be producing some unintended outcomes. Stakeholders have indicated that rather than register, some operators have chosen to redesign their activities to fall outside the “adventure activity” definition (for example, operators relocating their activities to patrolled ski areas). While still being required to meet their obligations under the HSW Act, this allows them to avoid the additional scrutiny of an adventure activity audit. Current commercial pressures on the adventure tourism sector may continue this trend, as operators seek to avoid the costs of registration and the associated business disciplines.

Adjusting the regulatory definition of “adventure activities” would have significant impacts on the sector. The uncertainty and extra cost created by expanding registration requirements may result in some businesses ceasing to operate or changing the activities they offer, particularly in the current economic climate. However, ensuring the scope of the regime is clear and provides appropriate coverage is necessary to ensure the regime achieves its policy objectives ensuring that all adventure activities with significant risk are included. It will also result in more equitable outcomes for operators.

The adventure activity regulatory definition and whether its scope is correct could be considered as part of a first-principles review.

The third party certification scheme may not be the most effective way for the regime to achieve its objectives

When the regime was established in 2011, the use of third-party auditors to certify operators was considered the most cost-effective way to increase regulatory oversight of and safety outcomes in the adventure activities sector.

Government practice on how third-party certification systems should be used in regulatory regimes has continued to evolve. Third-party certification allows regulators to harness the expertise of private industry, can be more efficient than direct regulator oversight and can

¹⁶ Current WorkSafe guidance on “What is an Adventure Activity?” identifies that these activities only might be subject to the regulations under certain circumstances. Only one operator offering horse trekking and no operators offering alpine hunting have registered as adventure activity operators.

provide a direct user pay mechanism. However, a number of reviews have noted such systems also carry risks that must be managed, such as regulator overreliance on certification to drive operator compliance, audits not being carried out to an appropriate standard by third parties, and regulator overreliance on certifiers to notify them of issues.¹⁷

This review has found monitoring and enforcement of the adventure activities sector by the regulator requires improvement, and recommended WorkSafe's role should be strengthened. A subsequent first-principles review of the adventure activities regime should examine if these recommended changes have been effective, or whether current weaknesses may be indicative of limitations in the regime's regulatory design similar to those observed in third-party auditing systems elsewhere.

Depending on the outcomes of the first-principles review, consideration may need to be given to alternative regulatory designs such as transitioning to a higher-scrutiny licensing regime, transferring the role of auditing operators to the regulator, or removing the requirement for adventure activities operators to register by placing greater reliance on the general duties of the HSW Act.

¹⁷ See, for example, Sapere Research Group (2018) *Insights into the operation of New Zealand's conformance system*, Office of the Auditor-General 2009 and 2012 reports *Effectiveness of arrangements to check the standard of services provided by rest homes*, and MBIE 2015/16 Building Consent Authority accreditation scheme review.

Next steps

This review has found that risks from natural hazards are pervasive across the adventure activity sector. Significant groups of activities were identified as having a medium to high risk of catastrophic harm as a result of natural hazards. These findings suggests that further work is necessary to reduce the risk of catastrophic harm caused by natural hazards.

While the regime has improved safety standards in the sector since its implementation, this review has identified a number of areas for improvement to better mitigate the inherent risks associated with natural hazards and strengthen the regime more generally. Further policy work will need to be developed to support the implementation of any proposed changes.

Further policy work to address the review findings will take place in two stages:

- **Stage one** - immediately commence further policy work to address the regime's limitations around natural hazard risk management and audit processes. This would include proposals to add specific requirements regarding natural hazard risks to the safety audit standard, change how audits are undertaken, and include a strengthened regulatory leadership role of WorkSafe. These proposals will cover both regulatory and implementation change.
- **Stage two** - undertake a first-principles review of the regime starting in 2023. This would consider the identified system-level issues around the regime's commercial viability, definitional scope and the use of third-party certification.

The two-staged approach reflects the differing risks associated with the issues identified through the review. Proposed changes to natural hazard risk management and audit processes and the role of the regulator are where immediate steps can be taken to address risks of catastrophic harm caused by natural hazard events. In contrast, the system-level issues identified (commercial viability, definitional scope and use of third-party certifiers) relate to the long-term sustainability and optimisation of the regime.

Public consultation on proposed stage one changes to the regime will be undertaken in the first half of 2021.

Annex 1: Natural hazard risk analysis

Natural hazard risk analysis was carried out on the Register of Adventure Activity Operators, administered by WorkSafe. The register lists all operators registered under the Adventure Activity Regulations, and the activities covered by the Regulations offered by each operator. As at 17 August 2020, there were 312 registered operators, offering 667 discrete activities.¹⁸ As commercial rafting operations moved from the scope of the Maritime Rules to the Adventure Activities Regulations on 1 October 2020, a number of rafting operations are not captured in this sample.

The indicative analysis has identified 12 natural hazard risks that intersect with adventure activities.

- **Risks from extreme weather events**¹⁹ – *high winds, severe hot and cold weather, lightning strikes*
- **Water surge risk** – *tidal surge, rogue waves and tsunami, including tsunami and seiche on lakes*
- **Flood (enclosed space) risk** – *flooding of an enclosed/contained space e.g. cave, canyon*
- **Flood (surface) risk** – *river and surface flooding due to rainfall including upstream rainfall*
- **Rockfall risk** – *sudden downward fall or collapse of rock material*
- **Landslide risk** – *includes debris flow. A moving mass of loose mud, sand, soil, rock, water and air that travels down a slope under the influence of gravity*
- **Snow avalanche risk** – *mass of snow, ice and rocks falling down a mountainside*
- **Icefall avalanche risk** – *falling blocks of ice as a result of glaciers flowing over cliffs*
- **Risks from rapids** – *river rapids including changing river patterns due to obstacles and rainfall*
- **Collapse risk** – *slippage or collapse of ground beneath, e.g. snow bridges, glaciers, cliff edge or inward collapse of natural structure e.g. cave system*
- **Risk of volcanic eruption** – *activity in proximity to active or potentially active vents e.g. Whakaari/Tongariro/Ruapehu*
- **Geothermal risk** – *including gas explosions, steam, ash fall etc. activity taking place in any known geothermal areas*

These classifications were developed in consultation with DOC, GNS and WorkSafe.

In order to assess the inherent risk of catastrophic harm from each natural hazard, the following criteria were used to calculate a *total inherent risk score*:

- Probability of natural hazard occurring
- Predictability of natural hazard, and expertise required to forecast it
- Likelihood of fatality to individuals in the event of a disaster

¹⁸ It is difficult to estimate the true number of discrete adventure activities offered in New Zealand. Many operators offer multiple activities, some as individual experiences and some as part of more complex packages. For example, a mountaineering expedition may also include ice climbing or snow caving within its scope, but these are listed as separate activities on the register. Thus, the count of 667 activities may not accurately express the number of activities offered.

¹⁹ Extreme weather events encompass high winds and severe hot and cold weather but excludes weather events captured under different risk categories, such as heavy rainfall or snow blizzards e.g. flooding or avalanche risks.

- Number of activities intersecting with natural hazards
- Likelihood that multiple operators will be offering activities on or near the natural hazard at the same time.

The probability, unpredictability and vulnerability criteria were weighted more heavily due to their greater contribution to catastrophic harm. Criteria and risk scores were developed following consultation with DOC, GNS and WorkSafe.

Identified natural hazard risks	Number of times registered activities intersect with natural hazard risks (note, an activity can intersect with multiple natural hazard risks)	Total risk score
Landslide risk	86	39
Icefall avalanche risk	11	38
Water surge risk	159	37
Risk of volcanic eruption (in proximity to active or potentially active vents)	6	36
Geothermal risk	0	36
Flood (enclosed space) risk	34	36
Collapse risk	42	35
Risks from extreme weather events	636	34
Snow avalanche risk	58	34
Rockfall risk	155	31
Flood (surface) risk	79	29
Risks from rapids	66	28
Total	1349 (average of two natural hazard intersections per activity)	

Table 1: Total risk scores for natural hazards and number of intersections with registered adventure activities.

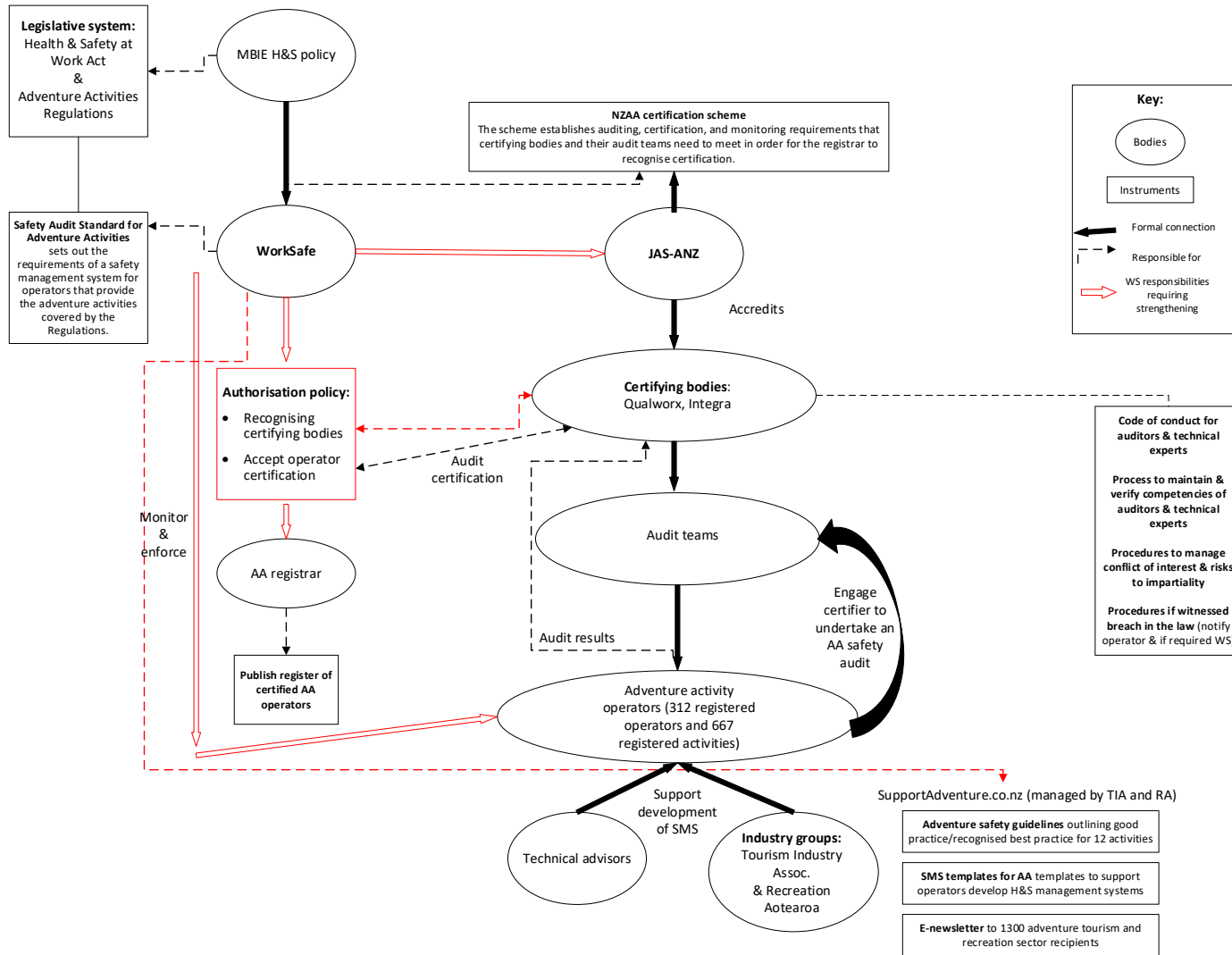
The risk ranges were developed by determining the highest possible score (49) and the lowest possible score (19). The upper, middle and lower thirds were determined to be high, medium and low risk. As the majority of hazards were shown to be medium risk, this category was split into two (medium-high risk and medium-low risk).

Inherent risk range		Number of identified natural hazards in each risk category	Average number of activities intersecting with natural hazard risk range
High risk	40-49	0	0
Medium-high risk	36-39	6	146
Low-medium risk	31-35	5	446
Low risk	19-30	3	73
Total number of registered activities intersecting with natural hazards			665

Table 2: Activities and hazards by inherent risk range.

The results from the natural hazard analysis have guided the recommendations. If a natural hazard risk framework were to be developed as part of the implementation of any proposed changes to the regime, further work on the framework would be required.

Annex 2: Adventure activities regulatory regime



Annex 3: Coverage of natural hazards in published activity safety guidelines

Full list of activity safety guidelines published to support the adventure activities regulatory regime	Medium-high risk of catastrophic harm					Low-medium risk of catastrophic harm				Low risk of catastrophic harm
	Landslide	Water surge	Volcano	Geothermal	Avalanche	Extreme weather events	Collapse of natural structures	Rockfall	Flooding (surface or enclosed)	Rapids
Abseiling (2019)										
All terrain vehicles (2018)										
Alpine hiking (2016)										
Canyoning (2019)										
Caving (2019)										
Coasteering (2019)										
Dive (2016)										
Heli-skiing (2016)										
High wire & swing (2018)										
Indoor climbing (2016)										
Mountain biking (2019)										
Rafting (2020)										

Natural hazard referenced in ASG	Natural hazard partially referenced in ASG	No reference to natural hazard in ASG
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Annex 4: Themes from stakeholder interviews

Between 7 and 22 October MBIE conducted a series of interviews with key actors in the adventure activities regulatory system to investigate their views on how the adventure activities regime is performing and how it provides for the management of natural hazards. Interviews were held with the regulator (WorkSafe), operator certifying bodies (QualWorx and Integra), the accreditation body for certifiers (JAS-ANZ) and lead industry bodies (Tourism Industry Aotearoa and Recreation Aotearoa).

Theme:	Interviewee
General performance of the scheme	
<ul style="list-style-type: none"> The scheme is generally working well. Since the implementation of the scheme health and safety outcomes have improved and risk management capacity continues to increase in the sector. 	<i>Industry bodies; Certifying bodies; Accreditation body; Regulator</i>
Role of WorkSafe	
<ul style="list-style-type: none"> WorkSafe has little direct oversight of how operators are performing. Reliance is largely placed on auditors to identify issues, and/or communication with JAS-ANZ. 	<i>Industry bodies; Certifying bodies Accreditation body</i>
<ul style="list-style-type: none"> WorkSafe does not appear to actively review audit findings. WorkSafe also do not always investigate participant complaints forwarded to them by certifying bodies. 	<i>Industry bodies; Certifying bodies</i>
<ul style="list-style-type: none"> WorkSafe should take a more active role to be an authoritative source of guidance for the sector. More guidance and a central point for operators to access and share information should improve outcomes for the sector. 	<i>Industry bodies; Certifying bodies Accreditation body</i>
<ul style="list-style-type: none"> WorkSafe's main roles regarding this regime are providing stewardship, acting as registrar and overseeing operator performance. The activities WorkSafe undertakes in relation to adventure activities must be balanced against WorkSafe's other organisational priorities, and prior to the Whakaari eruption this regime has been considered low priority for interventions (given its relatively low rates of harm compared to other sectors). 	<i>Regulator</i>
<ul style="list-style-type: none"> WorkSafe's role as a registrar does not provide it with high levels of information about operations. The registrar relies on the certifying body to assess that the operator has appropriate safety management systems in place as part of their certification decision. 	<i>Regulator</i>
<ul style="list-style-type: none"> WorkSafe is required by the regulations to recognise certifying bodies. There have previously been gaps and administrative issues with how this function has been performed. 	<i>Regulator</i>
Sector Leadership	

<ul style="list-style-type: none"> The adventure activity sector is fragmented, and lacks a centralised industry body to provide guidance and leadership for the sector. While industry bodies with adventure activities operators as members are currently supporting the regime, they do not have sufficient resources to provide comprehensive guidance to operators. 	<i>Industry bodies; Certifying bodies</i>
<ul style="list-style-type: none"> Certifying bodies have access to expertise to provide guidance to operators on safety management issues. However, current accreditation standards requiring certifiers to remain independent prevent these bodies from providing an advice service to operators. 	<i>Certifying body</i>
<ul style="list-style-type: none"> A number of key actors have been acting beyond their formal roles to support the system. However, some of these groups are now looking reduce operations to their formal roles. This may lead to gaps in areas like the provision of guidance to operators and administration of certifying bodies. 	<i>Industry body; Accreditation body</i>
<ul style="list-style-type: none"> WorkSafe’s Adventure Activities Registrar, the accreditation body and certification bodies have been able to work together effectively to support the certification scheme and address technical issues as they arise. However, recently this cooperative relationship has been disrupted due to WorkSafe’s investigation. 	<i>Accreditation body</i>
Natural Hazard identification and management	
<ul style="list-style-type: none"> Operators consider natural hazards as part of their risk management assessment. Current audit standards require operators to consider the risks of natural hazards. However, operators and auditors may need more guidance to ensure they are focusing on the right types of hazard. 	<i>Industry bodies; Certifying bodies; Accreditation body</i>
<ul style="list-style-type: none"> Natural hazards can be very difficult to assess, and operators often do not have high levels of expertise to interpret data about these hazards. Any new requirements will need to be realistic in the expectations placed upon operators. 	<i>Accreditation body; Regulator</i>
<ul style="list-style-type: none"> Frontline staff can face pressure from customers and the business to continue operating in potentially hazardous conditions. The regime should support operators to develop mechanisms and clear guidelines about the conditions in which they should cease or change their operations. 	<i>Certifying bodies</i>
Commercial weaknesses in the regime	
<ul style="list-style-type: none"> Third party auditing is a sound model, but is reliant on there being a robust market of auditors to support the system. 	<i>Regulator</i>
<ul style="list-style-type: none"> The current regime may not be viable long-term. Only two certifying bodies continue to provide audits. Adventure activities auditing alone is not a sustainable business for certifying bodies and requires subsidisation from other business activities. 	<i>Industry bodies; Certifying bodies; Accreditation body; Regulator</i>
<ul style="list-style-type: none"> Market pressures have led certifying bodies to adjust how they conduct audits to minimise costs. For instance, assessments conducted by auditors and technical experts are frequently occurring at separate times to allow more scheduling flexibility for both certifying bodies and operators. These changes can limit the robustness of audits, due to the reliance on technical expert recall. This increases the risk of human error in the audit process. 	<i>Accreditation body; Regulator</i>

<ul style="list-style-type: none"> The current cost of audits does not appear to be a significant barrier to operators offering adventure activities, but they are price-sensitive enough to switch between certifying bodies. 	<i>Industry body; Certifying body</i>
Audit process/scheme	
<ul style="list-style-type: none"> Audit processes are effective in identifying where operators are non-compliant and in driving them to improve safety standards. 	<i>Industry bodies; Certifying bodies; Accreditation body; Regulator</i>
<ul style="list-style-type: none"> Improvements can be made to make the auditing process more robust. In particular, requirements for on-site surveillance (rather than desktop reviews of systems) could be strengthened and use of technical experts can be improved. 	<i>Certifying bodies; Accreditation body;</i>
<ul style="list-style-type: none"> Desktop reviews do not provide the same level of assurance as on-site audits. There are concerns operators may let safety standards slip in the periods between on-site visits. Introducing random checks on operators may be one way to minimise this. 	<i>Certifying bodies</i>
Guidelines, education and upskilling	
<ul style="list-style-type: none"> The available good practice guidance for adventure activities only cover some activities and is becoming increasingly outdated. 	<i>Industry bodies; Certifying bodies;</i>
<ul style="list-style-type: none"> The templates for safety management plans provided are of limited value. These are encouraging a “cookie-cutter” approach to safety planning rather than active assessments by operators. 	<i>Industry bodies; Certifying bodies;</i>
<ul style="list-style-type: none"> While there is some coverage of natural hazard management in current good practice guidance, only a limited number of hazards and activities are covered. The introduction of broader, more crosscutting guidance on natural hazard management may be of value. 	<i>Certifying body</i>
Regulatory definition	
<ul style="list-style-type: none"> Operators often have difficulty obtaining a clear answer about whether their operations are “adventure activities” covered by the regime. There is too much reliance on the operator’s interpretation and insufficient guidance to support their decisions. 	<i>Industry bodies; Certifying bodies;</i>
<ul style="list-style-type: none"> It is arguable whether the extent of activities covered by the definition is appropriate. There are a number of activities with similar risk profiles that are not covered by the adventure activities regulations. 	<i>Industry bodies; Certifying bodies; Accreditation body</i>
<ul style="list-style-type: none"> The regime’s reliance on operators self-identifying whether they are providing adventure activities subject to the regime is appropriate, but does provide challenges to the regulator. 	<i>Regulator</i>

Annex 5: Findings of WorkSafe’s internal health check

Between June and September 2020, WorkSafe proactively conducted an internal health check considering the registration, monitoring, and enforcement aspects of their implementation of the regime. This project was separate to MBIE’s targeted review. The health check was conducted by a cross-organisation project team, with findings presented to WorkSafe’s Executive Leadership Team (ELT) in September.

The findings concluded that WorkSafe needs to better understand and recommit to its regulatory leadership role for the regime. This requires WorkSafe to:

- Take a system view of the regime, including understanding the sector, its participants, and their context
- Proactively escalate Regulation issues to MBIE
- Monitor, evaluate, and report on the performance of the regime, and implement any identified improvements where possible
- Have checks and balances in place to provide WorkSafe and others with assurance that the regime is working as intended, and
- Intervene in the regime when needed.

WorkSafe has identified a suite of actions to strengthen how it administers the regime. Actions include:

- Identifying issues with the design of the Regulations, and referring these to MBIE
- Identifying and addressing gaps in the operational policy framework
- Commissioning a project to more proactively ensure the regime is working as intended, and taking actions to improve it
- Reviewing the certification scheme and safety audit standard
- Establishing a system to flag when recognitions and registrations are due
- Improving record-keeping
- Improving support for the registration, compliance, and enforcement functions, and the connection between these
- Clarifying responsibilities and delegations
- Reviewing the WorkSafe-JAS-ANZ Memorandum of Understanding, and
- Developing a stakeholder engagement strategy, and strengthening WorkSafe’s education role in the regime.

WorkSafe advises that work is underway to progress these actions, with an expected completion date of June 2021.

MBIE is supportive of WorkSafe’s programme of work to strengthen regulatory leadership in the regime and notes the targeted review identified a similar gap in regulatory leadership by WorkSafe. MBIE will continue to work alongside WorkSafe to monitor the impact its new programme has on the performance of the regime.

