Improving health and safety in the cane industry

WORKPLACE HEALTH AND SAFETY CONTENT REVIEW

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Improving Health and Safety in the Cane Industry
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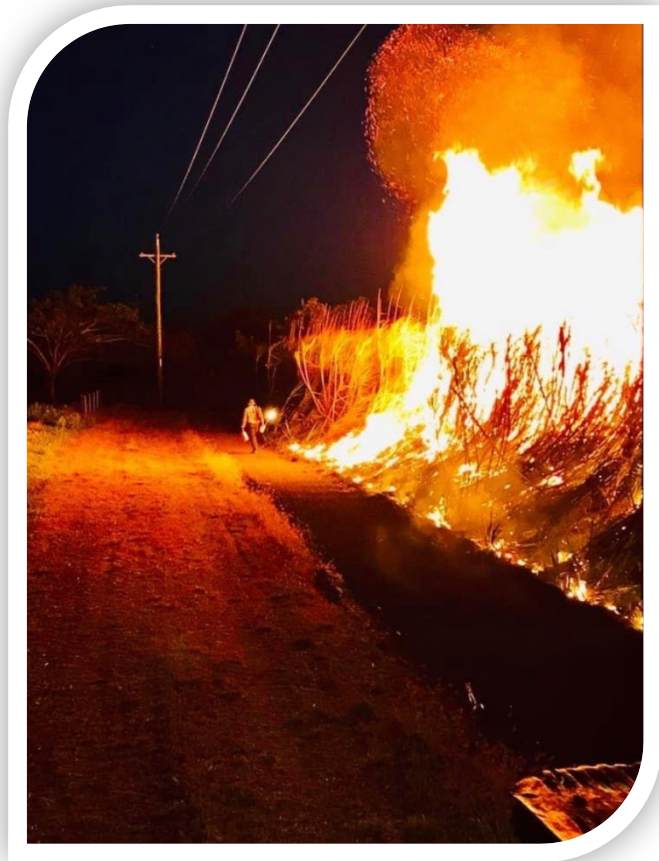Associate Professor Richard Franklin:
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Executive Summary

The sugar industry is a large contributor to the agriculture industry and economy in Queensland. Managing risks, including the requirement to do so under the various workplace health and safety (WHS) legislation, is a core part of business practice. Effective WHS practices do a number of things including making workplaces safe and thereby improving the health and wellbeing for employers, employees, and, as a function of the sugar cane location relative to the home, family members. Currently the voluntary Smartcane Best Management Practice (BMP) program has eight modules, of which the first three are core. There is a WHS module (Module 7) which is not required for accreditation nor a core module.

Aims

The aims of this project were to validate the BMP resources for WHS, highlight resources that exist which can be used to enact WHS practices and adoption and explore the barriers and enablers to WHS (including the completion of the BMP module).

Methods

There are three components of this project a desktop audit, review of the workers compensation data for the industry and focus groups/interviews exploring the barriers and enablers. The desktop audit reviewed the BMP WHS module content, proposed suggestions for edits and presented an overview of other industry and wider WHS resources. A review of the workers compensation data for the industry for the period 1st July 2009 to the 30th June 2019 was used to determine the types of incidents that are occurring on farms and using this as a way to identify some of the more common WHS hazards present on Queensland farms. Finally, two focus groups and nine interviews were conducted between August and December 2020. This saw a total of 20 people participate and 6 hours of discussion about WHS in the sugar industry recorded.

Key Findings

The WHS BMP module incorporates an array of relevant WHS practices for the industry. There are 13 key areas identified in the WHS module with practice standards listed as below industry standard and at industry standard. These standards cover many of the key WHS issues but not all and are written in a way as to presume awareness of WHS and the terms used. As such a review of the module content highlighted some opportunities for potential enhancement

including embedding relevant WHS content into the earlier compulsory modules or moving its position (i.e. making it module 4) and making the content compulsory. These changes would enhance the visibility of the WHS content and signal the importance of WHS as a key component of best management practice. WHS content is currently only incorporated into module seven. As there are WHS issues that relate to other module content, e.g. use of chemicals, incorporating relevant WHS into the existing compulsory modules would add value.

There are also suggestions on areas for improvement of content. This would include reorganisation of some of the standards, such as, expanding the industry standards listed under risk management, creation of a new standard titled hierarchy of controls which lists the various mechanisms for controlling hazards and incorporating definitions or links so that the standards can be correctly interpreted. The addition of new content is suggested in light of some of the contemporary WHS issues not being addressed, an example of this is fatigue management. Finally, ensuring the practice standards are written as singular statements will enable clearer differentiation between elements encapsulated by an industry standard and their practice performance.

Another issue that was noted was that it presumes knowledge of the various WHS terms and the interrelationships between these. The creation of a resources portal or at a minimum inclusion of definitions would be useful for users. It was also suggested that information be incorporated about the evidence requirements for each standard as a means to demonstrate practice at an industry standard. Setting timeframes regarding provision of evidence and mechanisms for this sighting to be signed off would be a requirement if the WHS was to be made a compulsory module. Breaking down the content to include a focus on people, equipment, environment and the process of meeting the standard at these various levels (as relevant) could provide some contextual information to growers in how to address their practice and bring it in line with the industry standard but also the legislative requirements.

The BMP facilitators when reflecting on WHS and their comfort in providing advice on WHS issues indicated a general reluctance to provide advice. This reluctance was largely driven by a concern of the legal implications if the wrong advice was given and their level of training and experience within this space. Enhancing the facilitators comfort with the WHS content or bolstering their ability to connect growers with safety specialists would be mutually beneficial

for the growers and facilitators. Mechanism to do this could be in the form of the provision of additional facilitator support, training and mentoring and supporting facilitators to refer growers on to others who offer specialised safety advice and services.

There were 475 compensated injuries across the ten year period with a cost of $8 million dollars. An average of 47 compensated injuries occur per annum and this is reflective of only those claims that were accepted. It is acknowledged that this data does not capture the injury experiences of sole operators and family members helping on the farm, which are key workers in the Queensland industry. This data reinforces the need to include some additional information in the BMP program about the types of incidents and hazards present in the industry such as falls and how to mitigate these risks.

The focus group and interview discussions highlights a number of barriers to WHS including the perception (real or perceived) of the onerous nature of WHS procedures, the associated paperwork, and the challenge in managing the many competing demands on the growers' time and resources. It was also perceived that navigating the various legislative requirements is difficult. It was acknowledged that WHS improvements are occurring nonetheless albeit slowly, central to this could be the issue of complacency. Incidents, when they occur, often serve as an important reminder and temporarily increase vigilance. Using these instances to leverage safety advancement through targeted communications could be impactful. Communicating about the benefits of WHS including the productivity benefits that can be conferred, the benefits to family members and showcasing good examples in the industry will reinforce the importance of safety.

Recommendations

A number of recommendations arouse from this project, particularly in relation the WHS BMP module content and signalling the importance of safety.

1. Increase importance of WHS material by either:

    a. WHS content be incorporated into the three compulsory modules as relevant or

    b. The WHS module be moved up and repositioned as Module 4. (signalling its importance)

2. The WHS material be made compulsory. It is noted a transition period to smoothly enable this will be required.

3. The check list statements be edited so that the content only includes one action per identified issue (i.e. singular statements). Also the WHS standards should identify industry / legislative requirement and above industry standard as well as the evidence required in support of meeting the standard. Thus enhancing the growers' awareness of requirements for WHS.

4. Adding standards that relate to contemporary industry issues (such as those noted as key injury mechanisms in the Workers' Compensation Data).

5. Providing some contextual information such as a glossary and WHS resources hub. The hub can link to existing resources (such as Workplace Health and Safety Queensland materials, Safe Work Australia resources and other industry portals).

6. Bolster BMP facilitator comfort with WHS by supporting referral processes to specialised safety specialists and provision of training and mentoring opportunities.

7. Develop evidence based up-to-date information material to help the sugar cane industry meet its WHS legislative requirements.

Conclusion

Given the importance of WHS and the legislative requirements, managing WHS risks is a core element of best management practice. As such, embedded WHS content into the existing compulsory modules and/or making the stand alone WHS module compulsory would underscore the importance of WHS. Ensuring the safety benefits are conferred to the industry will require meeting legislative requirements and aspiring to better existing industry standards.

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Background

Sugar industry: Context

In 2017-18 the sugar cane industry had a revenue of $1.5bn with 91% of sugar cane production occurring in Queensland. Thus the industry represents a significant agricultural industry within the state. The revenue is expected to have decreased for the 2019-

Photo by Josh Withers on Unsplash

20 period to $1.1 billion as a result of changes in the global market and as a result of the depreciation of the Australian dollar.(1) The general forecast for the global industry is that revenue will grow as a result of global demand.(1) However Australia, only presents a small player within this global sugar context. Much of the Australian industry is occupied by smaller growers, predominately in Queensland with this number declining (1) There are limited opportunities to expand the area of sugarcane in Australia, which is one factor driving the expansion of the size of business enterprises.(2) Weather is another external factor that influences sugar cane production and growth. Climate variability particularly in relation to rainfall has significant implications for crop quality and yield. Receiving too much or too little rain, alongside similar fluctuations influencing other key global sugar production areas all influences the productivity and profitability of the industry.(1)

The Queensland sugar industry is one of the most productive industrial contributors to the Queensland economy. Key production areas within Queensland are: Mackay, Herbert, Tully, Proserpine, South Johnstone, Plane Creek and Bundaberg. (3) Based on data from the Sugar Cane Levy Payer Register, the top producing region for 2019-20 was the Burdekin.(4) In 2020 there were 31.07 million tonnes of sugarcane harvested.(5) The estimated size of sugar cane

production area in Queensland for the period 2018-19 was 406,794 hectares, which was run by 3,266 businesses.

Work Health and Safety

Any activity that reduces the incidence of injuries and deaths and improves workers' health has benefits for the industry and improves productivity.(6) Managing risk (including Work Health and Safety [WHS]) is a part of regular business practice. There are also a range of legal obligations around workplace health and safety which if not managed can be costly to the enterprise and industry as a whole.

Some of the key WHS concerns historically relating to sugar production included issues relating to use of chemicals, injuries and smoke inhalation related to burning practices and injuries when cane was cut by hand.(6) Mechanical harvesters (an innovation started in Queensland) have been in use since the early 1950's, with full industry conversion occurring in 1979.(2, 7) Green cane harvesting, the act of harvesting the cane without burning, is currently in place in an estimated 85% of Queensland sugar cane farming production.(8) Other hazards remain present or have evolved to be replaced when work practices change – for instance noise and fatigue as a result of the harvesting demands are examples of two contemporary issues.(9) A review of the noted work health and safety concerns in Latin America sugar cane production and harvesting highlights the various work practice improvements and legislative protections which collectively work towards promoting the health and safety of sugar cane producers who are operating in Australia.(9-13) It is hoped that similar protections will be implemented or more widely adopted in this area of the world to protect workers.

Work Health and Safety (WHS), or Occupational Health and Safety as it is also referred to, requires the management of risks. The specific risks present will depend on the industry and the types of individuals covered will also depend on the nature of the business.(14) In 2009 a national approach was undertaken to try and remove discrepancies between the various states and territories WHS requirements via a Model Act. This act led to the development of new Work Health and Safety legislation. Within Queensland in 2011 the Work Health and Safety Act (Qld), Regulation and many of the Codes of Practice were updated.(15)

The Work Health and Safety Act 2011 sets out and puts legal obligation on both employer and employee around the requirements and standards for safe workplaces and what must be done to ensure the safety of all in those workplaces. Sitting under the Act is the Work Health and Safety Regulation 2011 which provides detailed information on how to prevent or minimise risks in your place of work. To help address both the Act and the Regulation, a number of Codes of Practice have been developed which provide specific information on issues to help achieve legal standards.

Some examples of codes relevant to agriculture include:

- Rural plant (2004)
- Sugar industry (2005) -
- Confined spaces (2011)
- How to manage work health and safety risks (2011)
- Electrical safety – Electrical Equipment rural industry (2020) -
- Managing noise and preventing hearing loss at work (2011)
- Safe design and operation of tractors (2005)
- Labelling of workplace hazardous chemicals (2011)
- Cane rail safety (2005)
- Sugar mill safety (2005)
- Managing risk of hazardous chemicals in the workplace (2013)
- Preparation of safety data sheets for hazardous chemicals (2011)
- Working near overhead and underground electric lines (2020)

Act: Work Health and Safety Act 2011 (Qld) can be found at:

https://www.legislation.qld.gov.au/view/html/inforce/current/act-2011-018

Regulation: Work Health and Safety Regulation 2011 (Qld) can be found at

https://www.legislation.qld.gov.au/view/html/inforce/current/sl-2011-0240

Codes: Qld Codes of Practice can be found at https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice.

Regulator: Workplace Health and Safety Queensland: https://www.worksafe.qld.gov.au/

Workers' Compensation Regulator: WorkCover Queensland more information can be found at: https://www.worksafe.qld.gov.au/laws-and-compliance/workers-compensation-laws.

Safety Systems

Prevention of injuries and deaths requires an understanding of the types of injuries and fatalities that are occurring but also the circumstances surrounding these incidents. On the basis of this information, hazards, conditions and behaviours can be altered accordingly. Fundamental to this is the understanding that safety systems are essential to this and "understanding that humans, their tasks, their equipment and environment make up a dynamic system" all of which can be altered so that safety is promoted, enacted and maintained.(16) This is a stark change from the traditional focus on job factors, employee behaviour and practices and hazards present in the work environment in isolation.(17)

Taking a wider systems view of work and the environment (social and physical) in which it is undertaken provides opportunities for improvement. This can occur at multiple levels – at the individual job task, business/ enterprise or industry level. A consideration of how to maximise worker health and safety and, to do so prior to a significant workplace incident occurring, has productivity and profitability benefits. Proximal to this occurring is that the WHS legislations enables self-regulation, there is sufficient knowledge to make this self-regulation meaningful and a shared interest in this process by both parties – employer and worker.(18) It has been noted that there is some movement of agricultural workers across and between industries on the basis of labour demand. This cross movement is likely, alongside a reliance on contract workers and contractors, to have implications (positive and negative) for WHS, safety systems and system maturity.(18, 19)

Best Management Practice – Smartcane program

The sugar cane industry has a voluntary best management practice (BMP) program that is used to record and verify production practices, called 'Smartcane BMP'.(20) This program is industry-owned, managed by CANEGROWERS and receives Queensland Government support.(21) Participation is not restricted to Queensland growers. There are eight online modules that form part of this program of which only three are accredited and considered to be core components. A central factor in the creation of this program was the concern relating to runoff (sediments, nutrients or pesticides) entering the water ways within the Great Barrier Reef catchment area. As such the three core modules are soil health and nutrient management (Module 1), irrigation and drainage management (Module 2) and weeds, pests and disease management (Module 3).(20)

For all eight of the modules, the format is checklist-based with these checklists acting to "unpack the latest research and technology into best practices that you can use to be recognised for your achievement and to further improve".(21) The 'Workplace Health and Safety' (WHS) (Module 7) is not part of the accreditation process nor is it considered a core module. As such, participation in this module remains low. Understanding obligations to provide a safe workplace alongside the capacity to assess risks and implement safety controls are a key component of WHS training and something that is required by law under the Work Health and Safety Act 2011.(22) As such improving cane farmers' understanding and engagement with WHS generally and specifically via the WHS module will be important to ensure safe work places and practices but this can also improve efficiencies through hazard identification.

BMP Facilitators

Local facilitators are located in 13 locations to help cane farmers with their BMP accreditation and to enact their learnings from the modules. These local facilitators are a key conduit for understanding cane farmers' interest in WHS, the barriers and enablers to WHS and their information needs at the point of contemplation and action in the BMP program. The facilitators are noted to provide advice and support as participants work their way through the module content and working towards accreditation.(21) Individual action plans can also

be co-developed with the assistance of facilitators for growers who may fall below the BMP standards. The form that these action plans may occur in are based on need and availability.

The facilitators have specialised knowledge in cane farming and of the districts in which they operate. Importantly, the advice and support provided may be in the form of direct provision of advice or pointing participants in the right direction to obtain additional training or specialised advice. (23) It is likely that the later may be utilised for issues pertaining to WHS were the regulatory landscape can be daunting and this has a wider scope than their own specialised industry knowledge.

Project Aims

The aims of this project are:

- Validate the BMP resources for workplace health and safety for sugar cane production
- Amalgamate additional existing resources which can be used to enact workplace health and safety
- Explore barriers and enablers to WHS (including the use of BMP)
    - Improve BMP facilitators' understanding of WHS to support the BMP module

Part A – Desktop Audit - Review of BMP Module 7 – Workplace Health and Safety

"The Work Health and Safety (WHS), online module will utilise a statement and response matrix covering the full range of activities and responsibilities associated with growing sugarcane." Jamie Cupples 2013.

The BMP modules, including the WHS module, uses a format such that growers are asked to read a statement and respond by indicating if they are below, meeting, or above best management practice standards. Information about supporting documents, key consideration, evidence requirements and auditing of responses is not readily apparent. The capacity to enter comments and upload supporting documentation is enabled.

Aim – What is in the module content and are there any obvious gaps? (See **Part C** for the follow on Question for: "Why aren't people doing it?")
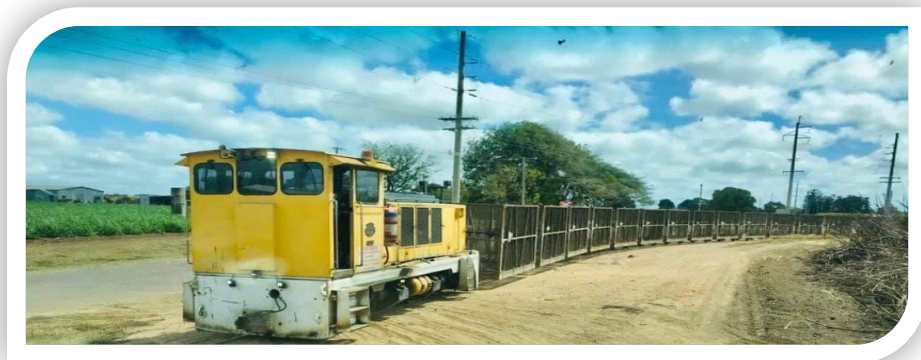
Methods

There were two components to undertaking this desktop audit: 1) A review of the WHS Module content available from the grower perspective on the BMP website including information about the module prior to commencement; and 2) A review of wider safety materials available historically or other that aim to engage and inform the growers regarding work health and safety, setting up safety systems and managing their regulatory obligations.

Process of BMP Module Content Review

A Smartcane BMP registration was created to enable module access. This was undertaken following the same process that prospective participants would take. All subsequent interactions with the Smartcane BMP portal were undertaken by the project team using this login. For ease of access, enterprise information was substituted for the project team's organisational details and, for property size details and other specifications some basic perimeters were entered. Key points of analysis in the portal related to content, background information, prompts for completion or uploading supporting documentation. All of these considerations was guided by a consideration of what exists, sense making (e.g. explanations of terms being used, links to additional information, instructions etc.), support opportunities and the potential for adaptation or enhancement.

Process of Desktop Audit of Wider Safety Materials

The reference group, contracts of the reference group and interview participants were asked if they had any sugar industry safety materials. If they did, they were asked to forward to us for review. An overview of document contents, relationship to other materials, type of document (factsheet, template, information etc.) and authorship details (if known) were

documented. Importantly, it is not known if these safety materials are still in use for reference purposes or being circulated.

Results

BMP WHS Module Content

The Workplace Health and Safety Module content as part of the BMP program presents two statements under the various key areas. These statements are in relation to identification of practices that are industry standard or below industry standard. Growers are asked to indicate if they are below industry standard or meet industry standard. There are opportunities to create action plans in relation to the contents and add comments however these are not mandatory steps. There is also the opportunity to create practice reports and assessment summarises with the option to select which BMP modules should be included. It is unknown if supporting documentation is a requirement. Table 1 illustrates the current content in Module 7.

Background Information

There is no background information to provide context to the content mentioned in the standards such as definitions of the terms used. This is a problem as it requires the participant has some understanding of the concepts in question in order to answer the question. Furthermore there are often multiple practices indicated in the one statement. For example – in section 7.4 on Training and Supervision. The following industry standard description is provided: "Workers are trained in safe work practices before commencing tasks. The workplace is supervised to **verify procedures** are being followed. Training meets requirements of WHS legislation and relevant codes of practice. **Records** are kept of training. Training and Safe Work Procedures are **reviewed** before different tasks are undertaken. For Bonsucro, more than 90% of staff are trained for health and safety at the start of employment and at least every 5 years." In order for this to be selected the following, at a minimum, would need to be present and documented: an overview of the safe work practices for the various tasks that will be conducted, the verification process to ensure procedures are being followed, a detail of the training provided (i.e. training record register) and alignment with the relevant legislation and codes of practices and safe work procedure register. While these statements do logically group together under training and supervision, there is the distinct lack of

separation of the training related statement, record keeping related statements and those pertaining to supervision processes.

There are a number of WHS risks present in this picture. Two of these are in relation to not complying with the electrical safety exclusion zone and the precarious angle of the haulout.

Table 1. Module 7. Workplace Health and Safety Content

Key Areas	Practices – Below Industry Standard	Practices – Industry Standard	Suggested Change
7.1 Awareness of WHS	Property owner/manager has limited understanding of legal responsibilities for the health and safety of workers, contractors and visitors or fails to meet them.	The property owner/manager understands their legal responsibilities for the health and safety of workers, contractors and visitors, and take appropriate actions to meet their obligations.	Change name to 'Management of WHS'
7.2 Risk management	No process of risk management has been undertaken for the workplace. No Safe Work Procedures have been developed.	A risk management process has been undertaken (in consultation with workers) for all activities in the workplace that pose a risk. Safe Work Procedures have been developed and implemented. Risk management processes and safe work procedures have been documented.	Incorporate some of the later key areas such as Environmental Hazards and an expanded scope (e.g. people, equipment, and environment).
7.3 Consultation	Safety issues are not discussed between owners/ managers and workers and contractors.	Regular discussion occurs between owners/managers and workers and contractors, to ensure a safe work environment is maintained. Consultation is documented when required by regulation and recorded.	

Key Areas	Practices – Below Industry Standard	Practices – Industry Standard	Suggested Change
7.4 Training and supervision	Safety training is not provided and/or workers are not made aware of safety issues. Limited supervision of safe work practices.	Workers are trained in safe work practices before commencing tasks. The workplace is supervised to verify procedures are being followed. Training meets requirements of WHS legislation and relevant codes of practice. Records are kept of training. Training and Safe Work Procedures are reviewed before different tasks are undertaken.	
7.5 Worker induction and records	Inductions are not undertaken for new workers and contractors or not recorded. Critical worker details are not known.	Inductions are undertaken for all new workers and contractors before work commences and are recorded. Critical worker and contractor details are recorded in a confidential personnel file on engagement.	
7.6 Visitor induction	Visitor inductions are not undertaken or not recorded.	Inductions are undertaken for all workplace visitors and details recorded.	

Key Areas	Practices – Below Industry Standard	Practices – Industry Standard	Suggested Change
7.7 Emergency response plans	No emergency procedures have been developed.	Emergency procedures appropriate to the property have been developed (in consultation with staff and family members), documented and are included in the induction procedure for new staff and contractors. Emergency procedures are reviewed annually and updated as required. Emergency procedures have been tested to check their effectiveness.	
7.8 Remote or isolated work	No effective system of communication with remote or isolated workers is used.	An effective system of communication is implemented for remote or isolated workers and the procedures are reviewed annually.	
7.9 Child safety	Limited awareness of child safety issues and/or limited effort to provide for child safety.	A process of risk management for the safety of children has been conducted and hazards identified and controlled. All staff, family members and visitors are made aware of the risks. Clear rules regarding child safety have been developed and implemented.	

Key Areas	Practices – Below Industry Standard	Practices – Industry Standard	Suggested Change
7.10 First aid kits and provision	No first aid kit or the kit is not appropriate for the workplace risks. Suitably trained first aid people are not available. Accidents or incidents in the workplace are not recorded.	First aid equipment is appropriate for the injury risks at the workplace and available in all work locations. Staff have appropriate first aid training for the property situation and work-place risks. Accidents and injuries in the workplace and associated treatments are recorded.	
7.11 Personal protective equipment	PPE is not available or is not well maintained. Staff are not trained in the use or maintenance of PPE and/or do not understand their duty of care to wear it.	The use of PPE is assessed and matched to the work conditions and task-specific requirements. The PPE is clean, well-maintained and available to all staff as required. Staff are trained in the use and maintenance of the PPE and understand their duty of care to wear it.	Create a new area – Hierarchy of Controls and move this section in there.
7.12 Environmental hazards	Environmental hazards are not managed in the work place.	Environmental hazards are considered and processes are in place to manage the risk, e.g. work rotation or limiting the duration of exposure.	Move this section in with risk assessment – so it contains information about people, equipment, process and environment.

Key Areas	Practices – Below Industry Standard	Practices – Industry Standard	Suggested Change
7.13 Incident reporting	Legal obligations not met. Lost time accident frequency not known or greater than 45 incidents per million hours worked.	Legal obligations for reporting incidents to WHSQ and WorkCover are understood and met. Accidents and injuries are recorded.	This section to include Return To Work (or the aspiration for this to occur)

It was also suggested that the format be enhanced to incorporate first steps and directions to guide engagement with the standard, information about aspirational standards and evidence requirements (Table 2).

Table 2. Evidence Checklist for Each Practice Standard

Key area	Standard	Evidence Required	Evidence Sighted	Finding Code*
7.1 Awareness of WHS	The property owner/manager understands their legal responsibilities for the health and safety of workers,	WHS Policies and procedures manual		

Key area	Standard	Evidence Required	Evidence Sighted	Finding Code*
	contractors and visitors, and take appropriate actions to meet their obligations.			
7.2 Risk management	**Standard to aspire to** **People** People know what their roles are, they have the skills and knowledge to do their jobs well and have a development plan in place. **Equipment** - Pre-purchase consideration on the correct type (i.e. is it the right tool for the task) **Environment -** **First Steps** **People** People know what their roles are, they have the skills and knowledge to do their jobs well **Equipment** **Environment** A risk management process has been undertaken (in consultation with workers) for all activities in the workplace that pose a risk. - Safe Work Procedures have been developed and implemented. - Risk management processes and safe work procedures have been documented. **Fit testing for RPE for all workers using chemicals.**	Completed risk assessment Documented safe work procedures Safe work procedures implemented		
7.3 Consultation	Regular discussion occurs between owners/managers and workers and contractors, to ensure a safe work environment is maintained.	Toolbox meeting notes and relevant diary entries		

Key area	Standard	Evidence Required	Evidence Sighted	Finding Code*
7.4 Training and supervision	**Standard to aspire to** - Workers are involved in the training process to ensure it is relevant and understood (think about getting them to do some short YouTube clips to share with fellow workers) - Supervisors are skin in the game; they lead by example and don't walk past poor work practices or behaviours. **First Steps** - Workers are trained in safe work practices before commencing tasks, and are they updated regularly The workplace is supervised to verify procedures are being followed.	Training records for new employees, for employees starting new tasks, and for updating more experienced employees. Policy and Procedures manual		
7.5 Induction and records	Inductions are undertaken for all new workers and contractors before work commences. Critical worker and contractor details are recorded in a confidential personnel file.	- Induction checklists completed and dated - Records		
7.6 Visitor inductions	Inductions are undertaken for all workplace visitors and details recorded. ***Consider taking this out – biosecurity has taken over from visitor inductions.***	Induction checklist and records		
7.7 Emergency response plans	**To aspire to** - Planning not to have an emergency **First step** - Appropriate emergency procedures are documented and included in the induction procedure for all workers, contractors, and families. - Fire safety, electrical line strike, incident. Emergency procedures are updated as required.	- Documented plan and signage - Training of new staff and contractors		
7.8 Remote or isolated work	**Standard to aspire to**	- Communication system in place - Inclusion in induction checklist		

Key area	Standard	Evidence Required	Evidence Sighted	Finding Code*
	- An effective system of communication is implemented for remote or isolated workers. - The system is tested	(blurb on what is remote – including tractor or machinery operators, shed workers with limited communications)		
7.9 Children on farm	**Standard to aspire to** - This is a farm business - Set clear guidance through leadership and culture to set a safe workplace for children entering the workplace. **First Steps** - No go zones for visitors - Limit access to vehicles - Setting clear rules through leadership and culture A process of risk management for the safety of children has been conducted and hazards identified and controlled. Clear rules regarding child safety have been developed and implemented.	Risk assessment Documented rules		
7.10 First aid kits and provision	**Standard to aspire to** - All families, workers and contractors are trained in first aid - Regular scenario training to put that training to use **First steps** - Appropriate first aid equipment is available at the workplace to manage the type of injury that you may need to treat. - Smaller first aid kits are in tractors and vehicles that have 2 way communication so they can be called to assist. - Staff have received appropriate first aid training.	- First aid kits available in all work locations - Training register		
7.11 Personal protective equipment	- PPE is appropriate (including compliance with label requirements in respect of chemicals), clean, well-maintained and available to all staff as required.	Appropriate PPE freely available to staff; Records of purchase.		

Key area	Standard	Evidence Required	Evidence Sighted	Finding Code*
	- Staff are trained in its use and maintenance and they understand their duty of care to wear it. Consider putting PPE into each hazard area such as chemicals, first aid, purchasing new equipment) needs to be included in the	Policy and procedures for training and monitoring of use are followed, with appropriate records of these.		
7.12 Environmental hazards	Environmental hazards are considered and processes are in place to manage the risk, e.g. work rotation or limiting the duration of exposure.	Risk assessment; safe work procedures documented		
7.13 Workplace Incidents and events	**To aspire to** - Incidents resulting to harm or possible harm to people and equipment is recorded, records are reviewed, workers are included in the discussion, control measures are implemented, and these are monitored. - Return to work programs are implemented for workers if injured so they can get back to work quickly. **First steps** - Legal obligations for reporting incidents to WHSQ and WorkCover are understood and met. - Incidents resulting to harm or possible harm to people and equipment is recorded. - Workers are aware they can access workers compensation if injured at work.	- Reporting templates sourced and appropriate records of reporting. - Register of accidents and injuries including those that are 'lost time' incidents (A lost time incident is one which causes an employee to be unable to carry on with his/her normal duties on the next day or next shift due to injury (excluding independent contractors) - Lost time accident frequency < 45 per million hours worked		
Electrical infrastructure	Poles & Stays – **to aspire to** - Don't plant up to or around lines, poles or stays so equipment cannot come in contact. - Earthing mats are identified and marked on property map - Tractors and harvesters are fitted with alarms to alert operator they are close to overhead lines **First step**			

Key area	Standard	Evidence Required	Evidence Sighted	Finding Code*
	- There is a plan in place to move overhead to underground around sheds. - Overhead lines are marked - Look up and live app is used to mark lines - Maps are shared Lines			
Purchasing new equipment				

* Finding Code: C – BMP, C+– above industry standard, Nc – below, N/A. With 'C' equating to compliant.

Figure 1. Work Health and Safety Materials – Example of Procedures, Reports, Checklists and Posters

Desktop Audit – Work Health and Safety Materials

A review of the existing templates and reports pertaining to sugar cane work health and safety was undertaken. Work undertaken by the Australian Centre for Agricultural Health and Safety and Canegrowers (Burdekin and Bundaberg) are the primary contributors within this space, for farm safety and sugarcane industry respectively.

Ten Steps to Safety Handbook

Of particular interest is the Ten Steps to Safety Handbook (Figure 2) which incorporates an array of procedures and forms (Figure 3). The ten steps provide guidance material with a focus on risk management of sugar cane farming processes in line with the legislative requirements at the time of compilation. Importantly, this handbook has easy to follow instructions and the capacity to adapt and complete the various forms. These all contribute to reviewing hazards, addressing risks and creation of a safe workplace.
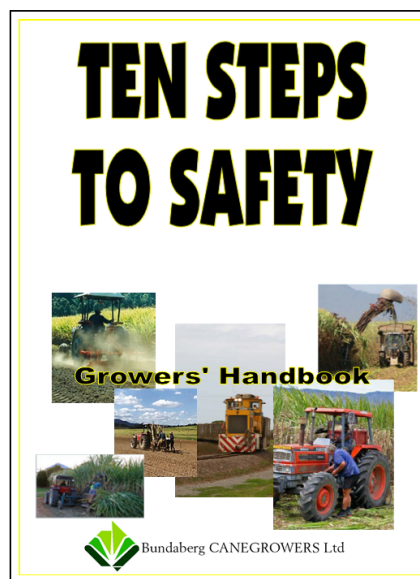
Figure 2. Title Page for Ten Steps to Safety – Growers' Handbook [Bundaberg CANEGROWERS Ltd]

Ten Steps to Safety – Growers' Handbook: Key Facts

Created: Gary Halliday, CANEGROWERS Burdekin Limited with assistance from Matthew Leighton, Bundaberg CANEGROWERS Ltd.

Purpose: For Use in sugar industry as a "starting point for growers to become compliant with legislative requirements".

Version Creation: 2006

Informed By: The Australian Centre for Agricultural Health and Safety – Practical Guide for Health and Safety in the Farm Workshop (2005), Farmsafe Australia, Queensland Cane Growers Organisation Limited, Rural Industries Research and Development Corporation and the report by Fragar, Franklin, Allen and Harding (2001). Occupational Health and Safety risks associated with sugarcane production.

Forms: 63 documents

Procedures: 24 documents

Pages in Handbook (without Business Adjustments to Forms and Procedures): 315

Capacity to Adapt: High. The Introduction (BCM00-P04) states: Inclusion of local safety issues, work procedures and instructions may be added to the appropriate sections.

Still in Use? Unclear.

Recommendation: Version update to ensure information is up to date with legislation and industry changes. Continue to use version control.

Figure 3. Ten Steps to Safety – Growers' Handbook: Key Facts

Sugar Industry Code of Practice 2005

The Queensland Government has produced a Sugar Industry Code of practice for use as "a practical guide to achieving the standards of health, safety and welfare required under the WHS act and the Work Health and Safety Regulation 2011" (p.4).(24) Essentially it is designed so that if followed this would ensure compliance with the health and safety duty of care required by the WHS Act.(24) Some aspects of the code of practice which are not adequately captured in the WHS module content include information about the hierarchy of control which is a mechanism to control risks ranging from highest protections and reliability afforded to the least effective. It also provides examples of specific health and safety issues for the industry such as heat, fatigue, noise etc.(24)

Other Materials

Other training and information materials exist. A brief overview of these will be presented. There are also an array of reports which incorporate information about occupational health

and safety risks, injury and fatality information and information about hazard reduction for sugarcane production.(25-29)

A key consideration when reviewing some of these older reports and documents is to consider the intended audience (Queensland or New South Wales (28)) and also the age of the documents. For example there may be revisions in response to changes in the various acts e.g. the 2002 Electrical Safety Act.(29)

Issues which impact WHS are also noted to exist in other industry documents.(30) For example – the value of digital camera monitors to assist during harvest periods (p.28) and the need to consider WHS guidelines when creating harvest plans (p.46).(30) WHS guidance and information for the agriculture sector is available in the form of reports from the Australian Centre for Agricultural Health and Safety (now called AgHealth Australia) and Farmsafe Australia. For example the farmer resources and safety library available at the Farmsafe Australia website. There is also general WHS information and resources available from Safe Work Australia and the Work Safe Queensland websites.

BMP – Facilitators

A focus group discussion was undertaken with the facilitators to discuss various issues in the industry. Some of their responses are outlined later in the report (**Part C**). However a central concern that arose when discussing the WHS module specifically was their level of confidence and/or comfort in providing BMP participants advice pertaining to WHS.

Table 3. BMP Facilitators – Reflections on Barriers and Concerns providing advice on WHS

Themes	Illustrative Quotes
Facilitator confidence and comfort providing advice on WHS related content – Legal ramifications	"…but I am not trained in that area. I would really prefer to let somebody who knows what they are talking about because there's a lot of legal issues behind all that, if you give them the wrong advice." [1] "We do safety training and all that sort of stuff, but to do it correctly and to make sure that you're within compliance of what the Acts and all that are behind all the work, health safety of things. I don't have that training. There's no way in the world I've got that training to cover off on something that - and I wouldn't feel comfortable poking my neck out to try and cover off on something that I'm not trained enough or well enough to advise in." [1] "We can give hints and give them the things that are provided in the module but I wouldn't feel comfortable giving advice and saying, yeah, you do this, this and this and you'll be fine. If there's something lagging, then that comes back on us." [1]

Recommendations

There are eight recommendations to enhance the BMP WHS module.

1. Move the WHS module to become Module 4.
2. Make the WHS module compulsory. Or at a minimum, incorporate relevant WHS content into the compulsory modules. For example, when discussing fertilisers as an industry standard also include an industry standard about safety data sheets.
   a. It is acknowledged that a transition period will be required to transition this content to being a compulsory component. Currently accredited business will be given a realistic time frame in which to engage with the WHS module and maintain their accreditation.
3. Provide additional support, training and mentoring to the BMP Facilitators. This could include supporting facilitators to refer growers for specialised WHS advice.
   a. Employing a WHS qualified facilitator would also be useful if the WHS module was to become compulsory.
4. Irrespective of if the other recommendations are accepted it is recommended that some changes to the WHS module content be undertaken.
   a. The establishment of a WHS glossary to ensure correct interpretation of the terms being used.
   b. Creation of a WHS resources portal where growers can obtain more information and access to templates, safe work procedures and codes of practice. This portal would link into developed resources including industry specific ones.
      i. A factsheet has been created which draws upon existing WHS information and emphasises the importance of risk management (Appendix 7). This content gives context to some of the practices identified in the module.
5. The industry standard phrasing be reviewed so there are separate tick boxes for the various components in the industry standard. There appears to be inconsistencies in the BMP content in the delimitation of the standard contents. For example compare Canegrub management 3.11 and Training and Supervision 7.4.
6. Inclusion of industry standard related to contemporary issues that as managing farm pressures, fatigue and electrical safety.
7. Incorporating information about evidence requirements, when evidence is sighted and review dates as part of the checklist or activity plans (Table 4).
8. Annual review of module content.

Table 4. BMP Module Checklist Requirements

Key Area	Industry Standard	Aspiration	Evidence Required	Sighted	Working Towards by this date	Finding

Photo by Chaz McGregor on Unsplash

Part B – Workers Compensation Data

"A safe workplace benefits everyone. It protects workers from injury and illness—but it also increases productivity, lowers running costs and improves morale." Creating Safe Work, Safety and Prevention, Worksafe Queensland Website, 2021

If you employee staff in Queensland you must insure these workers against work-related injuries or illness. Work-related injuries can include physical injuries, diseases, psychological disorders or death. There are two ways to do this. The first is via Workcover Queensland and the second is to self-insure. Most employers choose the first option. Many agriculture businesses do not employ anyone, meaning they are not part of the workers compensation scheme. Injury insurance coverage in these businesses occurs through a private insurance scheme, and as such any work-related injuries that occur to these individuals are not reported in workers compensation statistics. This is important to keep in mind when interpreting workers compensation data.

Once a person has sustained a work-related injury or illness which has been seen by a doctor and a work capacity certificate has been provided a claim is lodged. From this information workers compensation statistics are produced.

Aim – To use this data to determine the types of incidents that are occurring as a means to identify potential gaps in work health and safety knowledge.

Methods

De-identified workers' compensation data was obtained from the Queensland Department of Work Health and Safety for the period 1 July 2009 to 30 June 2019. The data was filtered to the industry of employer as 'Sugar Cane Growing' only and for the period 1 July 2009 through to 30 June 2019 from the larger dataset.

Fields of enquiry included demographic information, injury information including the mechanism, agency and body location, and cost of compensation (Figure 4).

Workers' Compensation Data: An Overview

Purpose: Workers' compensation data 1 July 2009 to 30 June 2019

Data Format: All data used to undertake this review is de-identified. Care is taken to ensure small cell count violations do not occur. **Small cell counts** are when the number is below 4. Small cell counts should be avoided to reduce the potential for identification of individuals on the basis of information outlined. Data validation occurs. Where this occurs in a table a NP (not presented) is displayed.

Frequency: Insurer's provide data to the Workers' Compensation Regulator each month. All insurers follow the same reporting guidelines including data frequency and formatting.

Data Updates: Insurers can update the information provided to the regulator when additional information about a claim becomes available. This has implications for data usage and timeframes of usage.

Injury Considerations:

Agency: This incorporates two codes - breakdown and agency of injury/disease. With breakdown agency being "the object, substance or circumstance that was principally involved in, or most closely associated with, the point at which things started to go wrong and which ultimately led to the most serious injury or disease. The agency of injury/disease refers to the object, substance or circumstance involved in inflicting the injury or disease." p.167 [Type of occurrence classification system 3rd edition report]

Location: Bodily location of injury/disease which "intends to identify the part of the body affected by the most serious injury or disease". p.99 [Type of occurrence classification system 3rd edition report]

Nature: "intended to identify the most serious injury or disease sustained or suffered by the worker" mainly physical but also includes mental illness. p.25 [Type of occurrence classification system 3rd edition report]

Mechanism: "Intends to identify the overall action, exposure or event that best describes the circumstances that resulted in the most serious injury or disease". p.143 [Type of occurrence classification system 3rd edition report]

Regulatory Environment: The workers' compensation data is a by-product of the legal framework in Queensland which is the Workers' Compensation and Rehabilitation Act 2003 and the Workers' Compensation and Rehabilitation Regulation 2014. Collectively the Act and Regulation outline the law, scheme boundaries, responsibilities and rights pertaining to Compensation and Rehabilitation for Queensland. [Workers' compensation laws- Queensland Government WorkSafe Website - https://www.worksafe.qld.gov.au/laws-and-compliance/workers-compensation-laws accessed 18 Dec 2020.]

Figure 4. Workers' Compensation Data: An Overview

Results

There were 475 workers comp events where an injury occurred and were reported to the authority. Of these the majority (94.3%) were male aged between 16 and 72 years (Mean = 40.9; Mode = 25) with the largest age group being 25-34 years (23.8%) (Figure 5). Females were significantly (p<0.001) younger than males (28.1 years vs 41.7 years), with the majority (88.9%) aged less than 35 years.
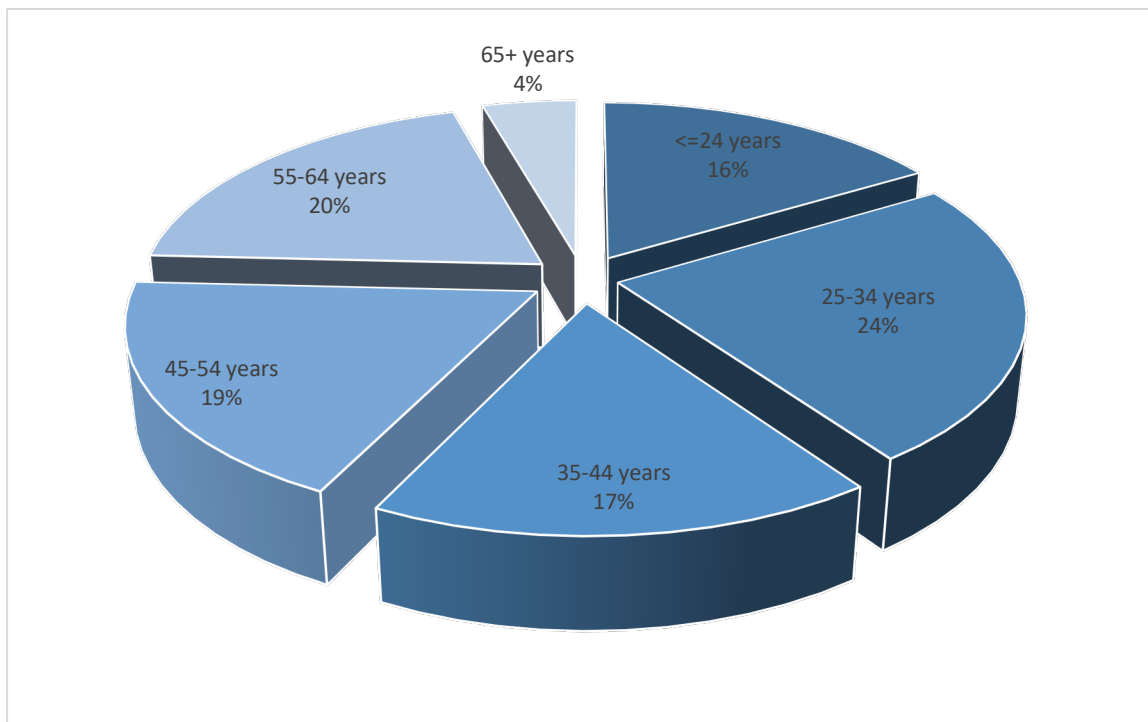
Figure 5. Age groups of people compensated in the Queensland sugar cane industry, 2009/10 to 2018/19

On average there were 47 injuries per annum which were compensated in the sugar cane industry in Queensland, this was an upward trend of 1.4 cases per annum (y=1.3636x + 40; R^2=0.2993). (Figure 6). All age groups had an upward trend in the number of injuries per annum with the 25-34 years seeing the steepest increase (y=0.6364 +7.8; R^2 = 0.3708) except the 34-44 years which had a decline in the number of injuries per annum (y=0.3091x + 9.8 R^2 = 0.1927). While females made up 5.7% of the total number of compensated injuries, there were none over the age of 65 years and in the <=24 years age group they represented 15.4% the largest proportion in any age group.
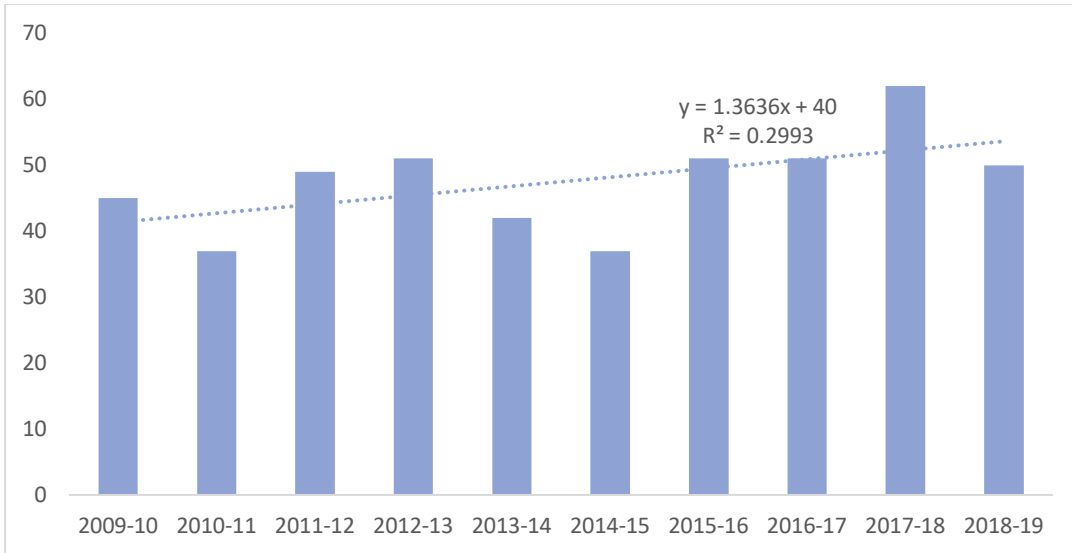
Figure 6. Compensated injuries per annum, Queensland sugar cane industry, 2009/10 to 2018/19

The total payment for compensated injury from the regulator over the period was $8 million, with a mean cost of $16,894 per incident. The payments ranged from $0 to $778,746.17 with 12 over $100,000. There was a slight increase in the costs per annum (y=$1,133.4x + $9,446.2; R^2 = 0.2336) (Figure 7). As workers age the payment for compensated injury also increase with those less than 35 years around the $10k mark (<=24 years - $10,682; 25-35 years $9,034) and those over 55 years around the $27k mark (55-64 years = $28,979; 65+ = $26,465) (Figure 7).
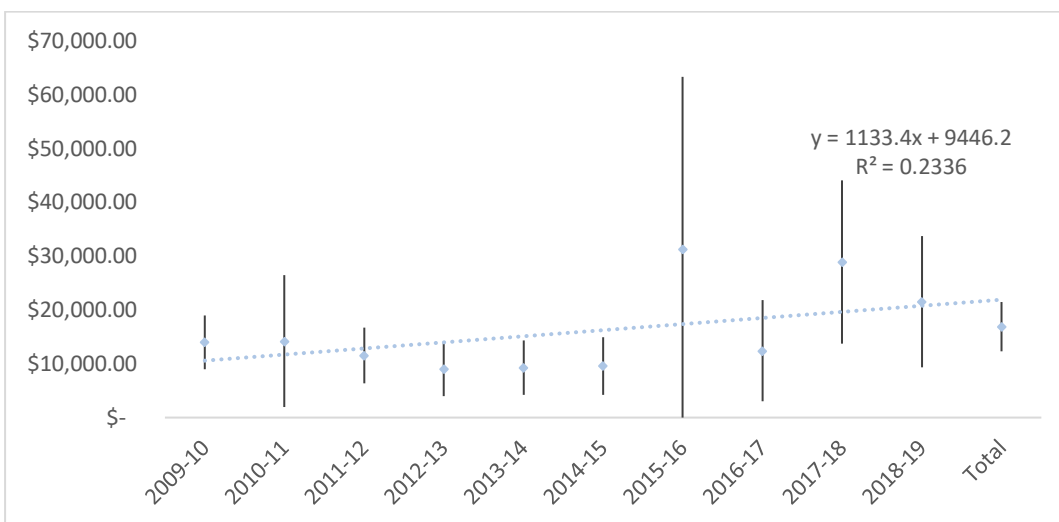
Figure 7. Average per annum payment of compensation for the sugar cane industry, 2009/10 to 2018/19

The three most common body location injuries were upper limbs (36.0%), lower limbs (27.8%) and trunk (18.9%). (Figure 8). Of the injuries to the upper limbs, the majority were the hand including fingers and thumb (55.6%) and shoulder (23.4%). Of injuries to the lower limbs, knee (29.6%), followed by ankle (22.7%), foot and toes (18.2%) and lower leg (15.9%) were the most common locations. Nearly two-thirds (72.2%) of all trunk injuries were to the back. The hand (20.0%), back (13.7%) and shoulder (8.4%) were the three most common injured body locations.
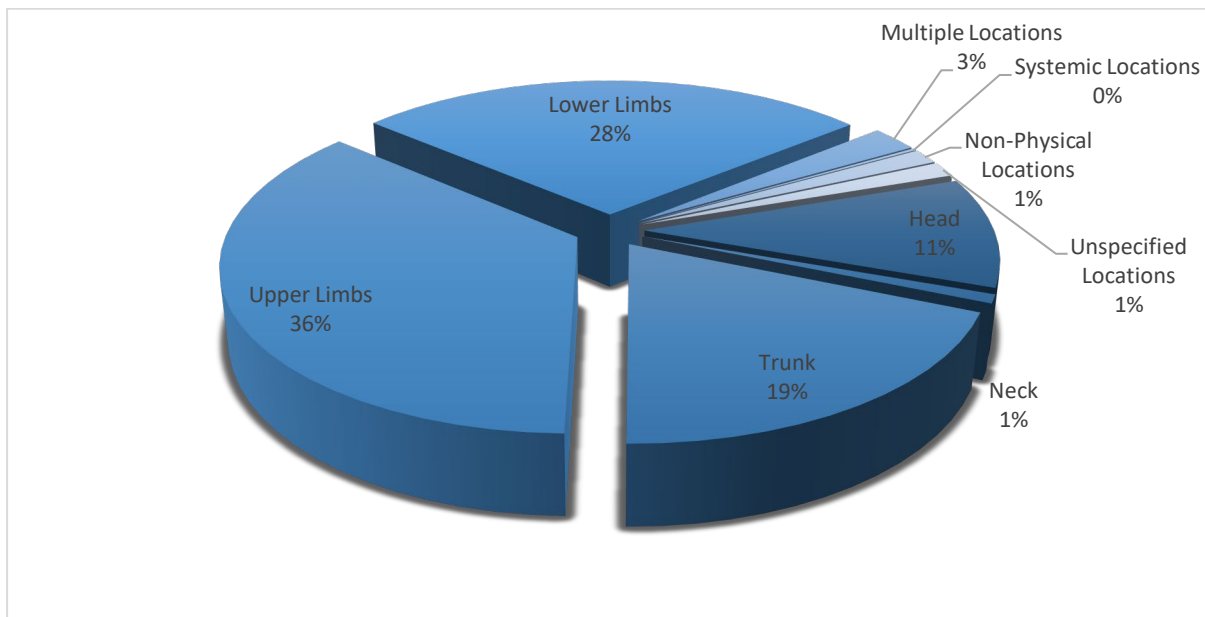
Figure 8. Body location injured, workers compensation for the Queensland sugar cane industry, 2009/10 to 2018/19

The four most common mechanisms of injury accounting for three quarters (78.9%) of all mechanisms were being hit by a moving object (22.1%), falls (20.0%), body stressing (18.7%) and hitting objects with a part of the body (18.1%) (Figure 9). While the most common sub-mechanism of injury for hit by moving object was hit by moving object (41.9%), being trapped between stationary and moving body was the next most common (19.0%), followed by being hit by falling objects (17.1%). Of the falls, half (52.6%) were from a height and the rest were on the same level (47.4%). For body stressing the majority were while handling objects other than lifting, carrying or putting down (56.2%). For mechanism of injury due to hitting objects with part of the body the majority (64.0%) were hitting moving objects.
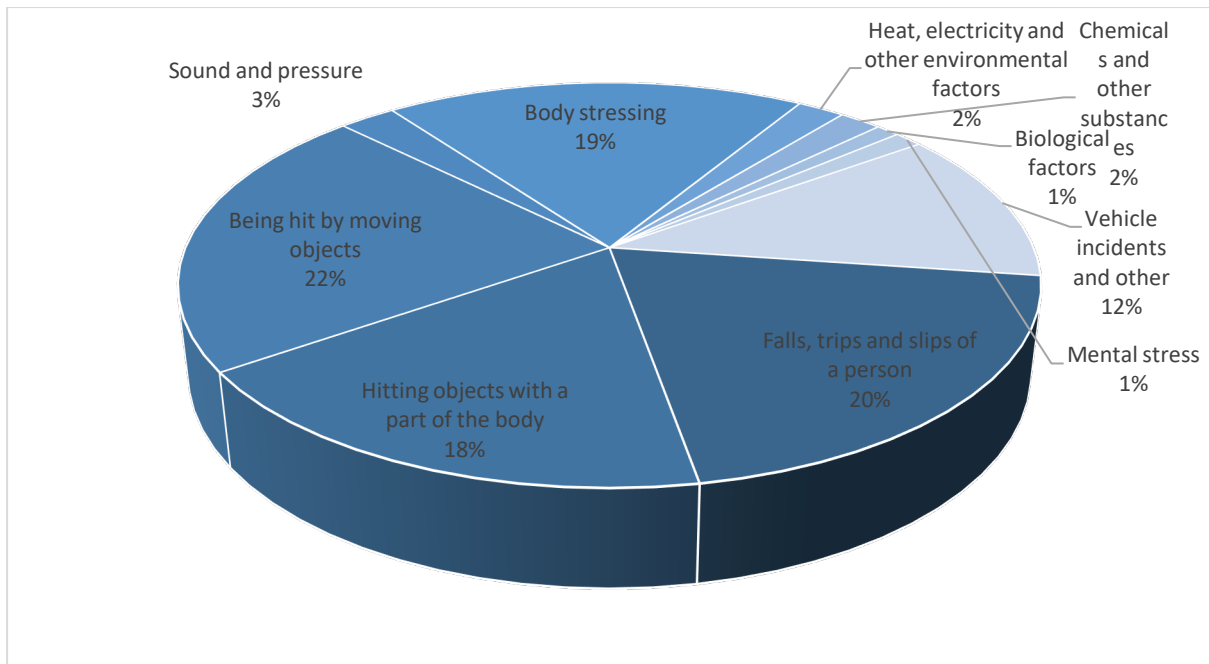
Figure 9. Mechanism of injury, Queensland sugar cane compensated injuries, 2009/10 to 2018/19

Upper limbs injuries were due to being hit by moving objects (26.9%) and hitting objects with a part of the body (25.1%). Lower limb injuries were from falls (35.6%), being hit by moving objects (23.5%) and hitting objects (17.4%). The most common mechanism for head injuries was being hit by a moving object (45.1%) (Table 5). Falls for lower limbs (9.9%), being hit by moving objects for upper limbs (9.7%) and body stressing for trunk (9.7%) were the three most common body location and mechanism combinations (Table 5).

Table 5. Body location by mechanism, Queensland sugar cane compensated injuries, 2009/10 to 2018/19

Mechanism	Body Location							
	Head	Neck	Trunk	Upper Limbs	Lower Limbs	Multiple Locations	Other	Total
Falls, trips and slips of a person	NP		15	27	47	4		95
Hitting objects with a part of the body	11		8	43	23		NP	86
Being hit by moving objects	23		4	46	31		NP	105
Sound and pressure	12							12
Body stressing		NP	46	26	12	NP	NP	89
Heat, electricity and other environmental factors	NP			5	NP	NP		10
Chemicals and other substances	NP		NP	NP	NP	NP	NP	9
Biological factors				NP		NP	NP	5
Mental stress							6	6
Vehicle incidents and other	NP	NP	16	21	15	NP	NP	58
Total	51	4	90	171	132	12	15	475

NP = Not presented.

For upper limbs wounds etc. (41.5%) were the most common nature of injury, for lower limbs it was fracture (25.8%), wounds etc. (24.2%) and traumatic joint / ligaments injury (24.2%) and for the head it was wound etc. (33.3%). (Table 6)

Table 6. Body location by nature of injury, Queensland sugar cane compensated injuries, 2009/10 to 2018/19

Nature of Injury	Body Location							
	Head	Neck	Trunk	Upper Limbs	Lower Limbs	Multiple Locations	Other	Total
Intracranial Injuries	NP							NP
Fractures	NP	NP	9	26	34	NP		76
Wounds, Lacerations, Amputations and Internal Organ Damage	17		10	71	32	NP	NP	133
Burn				6	NP			NP
Traumatic Joint/Ligament And Muscle/Tendon Injury	NP	NP	16	39	32	NP		94
Other Injuries	16		NP	8	5	NP	NP	34
Musculoskeletal And Connective Tissue Diseases			40	14	21	NP	0	76
Mental Diseases							7	7
Other and other diseases (excluding mental and musculoskeletal)	13		12	7	6	NP	5	46
Total	51	4	90	171	132	12	15	475

NP = Not presented

Summary

There were 475 compensated injuries over the study period with a cost $8 million dollars. This is an average of 47 compensated injuries in the sugar cane industry per annum with a small increase over the study period. The information provided here is a snap shot of injuries which occur to employees and are compensated while working in the sugar cane industry. This means that injuries that occur on family cane farms where the workers are not classified as employee, to contractors (as they are covered by their own employer) or to sole operators who do not have workplace personal injury insurance are not captured in this data set. As such, the data captured in the above tables and figures represents a proportion of the injuries which have occurred.

Males were more likely to be injured and made up 94.3% of all claims. The average age of people injured was 41.7 years with a quarter of all injuries occurring to people aged 25-34 years. The average cost of compensation was $16,894 with the maximum being $778,746. Upper and lower limbs were the most common locations of injury, with falls, being hit by moving objects and hitting objects the most common mechanisms. Further work is required to unpack the workers compensation information to transform it into actions to help improve workplace health and safety in the Queensland cane industry.

Complexity of Contractors

Determining if a contractor is considered to be a worker under the *Workers' Compensation and Rehabilitation Act 2003* can be a minefield given it is contingent on a number of different factors. It is recommended that this be a point raised in terms of ensuring WHS for all people entering and working, as a worker or other, on cane farms. As a starting point consider the following information from Queensland Work Safe website (link current as at Dec 2020): https://www.worksafe.qld.gov.au/claims-and-insurance/workcover-insurance/who-should-i-cover.

Eligibility and Claim Processes: Implications for Data Interpretation

As already noted there are limitations of this data, the data captured in the above figures and tables represents injuries whereby a) a worker was injured at work, b) a work-related incident caused the injury, c) a compensation claim was submitted, d) it was submitted within the required timeframe, e) a person's job was a significant contributing factor to the injury and f)

the claim is accepted. Notably, given the various requirements for eligibility and the steps in the claim process, using the workers' compensation data alone as a proxy of injuries occurring in workplaces is likely to be an underestimate. It is the most compelling data source currently available, it provides insights into workplace injuries and successful claims.

Part C – Barriers and Enablers to Work Health and Safety

"It seems that the major barriers that producers face include the cost, time and inconvenience to implement current strategies for safety practice, negative attitudes toward safety and the sheer administrative burden and confusion that current WHS legislations presents in practice. There are indications that attitudes toward WHS are changing, across generations of producers, and that group approaches to solution generation are improving leadership on WHS issues in [agriculture and fisheries] industries." (pxi).Franklin, King and McBain-Rigg (2015) (38)

Exploring individual behaviour requires a consideration of the motivations and factors that influence behaviour adoption. Central to this line of enquiry is a consideration of the barriers and enablers. For the purposes of this discussion, a barrier and enablers will be termed as follows:

Barrier: *"a real, or perceived obstacle which makes something difficult or impossible to achieve".*

Enabler: *"a phenomenon which makes something easier or helps cause an action to be adopted". (p. 3) (31)*

Previous work undertaken within this space exploring the barriers and enablers to adoption of improved work practices for safety, with a specific consideration of interventions but encompassing WHS generally, with primary industries provided some initial insights.(31) The sugar industry was represented as part of this work and some interesting issues and industry specific challenges emerged (Appendix 7 pg. 88-89 of the report).(31) Fatigue, issues with labour supply, overhead electricity hazards and the length of the harvest season were some of the industry challenges. Given these issues it was perhaps not surprising to see that major barriers to adoption were stress, time limitations, and costs to address electricity hazards. Equally important to consider however where the identified enablers to improved safe work practices which includes training opportunities, leadership and communication within the industry and the Smartcane BMP program was specifically drawn out.(31) Given this research

was conducted in 2014, it is timely to again speak with members of the industry about WHS and the barriers and enablers.

Aim – To understand what helps and hinders completion of work health and safety and where does the BMP module fit in?

Methods

Participant Recruitment

The reference group provided suggestions for key individuals present within their region that could be contacted. It was envisioned that a mixture of occupational roles would be captured including farm owners, managers, contractors, industry organisations and work health and safety professionals.

Ethics Approval and Data Collection

Ethics approval to undertake the project was obtained from the James Cook University Human Research Ethics Committee (Approval Number H7981) (Appendix 1). The initial project scope was to run focus group sessions in a face-to-face format in six locations across Queensland. Unfortunately this approach had to be revised due to COVID-19 restrictions. An ethics amendment and approval occurred (1 May 2020) to change the data collection

approach from focus groups to interviews undertaken via phone or internet enabled video conferencing software (e.g. Zoom or Skype).

The list of key individuals within the various sugar regions that were forwarded by the reference group were followed up. Individuals were contacted via phone or email and a brief overview of the project was presented. An information sheet (Appendix 2) was sent via email along with a consent form (Appendix 3). Individuals were instructed to read the information sheet and if they were happy to participate, to complete the consent form and return this to the project team.

A pre-formulated set of semi-structured questions were developed to guide points of discussion although there was opportunity to pick up on points raised and expressed (Appendix 4). Prior to the commencement of the focus groups and interviews, participants were asked to verbally reconfirm that they consented to participate and for the session to be audio recorded for transcription purposes. When this was re-confirmed, audio recording commenced. A professional transcription service was contracted to provide transcription of the sessions, with names to be removed from this final transcript.

Participant Overview

During the period August to December 2020, two focus groups and nine interviews were undertaken. These focus group sessions and interviews ran for a total of 357 minutes (almost 6 hours) and saw 20 people participate. As expected, there was a healthy representation amongst different occupational roles and positions.

Analysis

Analysis of the conversations occurred by uploading the finalised transcripts into NViVo software.(32) Inductive thematic analysis was undertaken, focusing initially on reviewing the discussions from each interview, the question themes and then reviewing themes from the collective sessions.(33)

Results and Discussion

After introductions, the interviews/focus groups started by asking the participants to reflect on their awareness of recent work-related injury events. This was used for two reasons, 1) to enable participants to warm up to the topics of discussion and, 2) to obtain some preliminary insights into their awareness of injuries that are occurring in the industry. The injury events

describes were typically reflective of events the participants were aware of that have occurred in their district. Very few mentions to events that have occurred on their own farm or enterprise were relayed. Typically, there is an initial reluctance to mention these events are the beginning of a session but as participant comfort, rumination on the topic occurs and the specificity of the questions posed some of these instances are more forthcoming as the session progresses. There is also a general sense amongst the people being interviewed that it is a certain segment of cane farming enterprises who are more complacent about WHS than they themselves are. It is undeterminable if this is in fact correct, or a reflection of the participant's familiarity with their own WHS procedures and practices compared to the relative lack of familiarity with the work practices of others.

There are identified as being some industry specific issues that influence WHS generally including the cyclical nature of business, workforce labour challenges and the numerous demands on producers time (Table 7). Some of these comments speak to the capacity and potentially willingness to adopt improved work place health and safety practices, being cognisant that often the capacity and willingness is not always straightforward in light of the juggling act that can often be occurring to manage day to day production tasks.

Table 7. Sugar Cane Industry – Contextual Comments

Themes	Illustrative Quotes
Nature of Business	"Business is so cyclical. It is either really quiet or it is flat out. There isn't a lot in between." [1] "As we work on the farm, there is normally a bundle of jobs to do and you are normally fairly time poor and those jobs have to be done in a certain period. So basically, a lot of people all they are thinking about is how can I get this job done as quickly as I can." [10]
Future of the workforce	"Labour knowledge, in our area, a lot of it has been lost with the small farmers in our area. Because Mum's and Dad's in their 50s and 60s their kids are looking at thinking 'well I don't want this job'. Their parents are not encouraging them to stay on the farm they are encouraging them to go and do something else. We are seeing an ageing workforce and we aren't seeing the apprenticeship by growing up on farms and not being part of the industry sort of thing." [2] "No, there are not many young ones coming into the industry at all. That is one of our biggest problems." [7]

Themes	Illustrative Quotes
Ownership of Farms	"Where you pretty much have one farmer just running the show then you get big business coming in and buying quite a few of the smaller farms and amalgamating all of that." [1] "A lot of our growers are small to medium growers so they are owner-operator and they are just trying to do everything. It [WHS] is just one more thing." [1] "No they do everything they can themselves." [2]

Some of the most commonly report incidents that are occurring within the industry, that the participants were aware of, included interactions with power lines, capacity of workforce, contact between machinery, plant and people (Table 8). The consequences of these incidents can range from near misses up to fatal incidents.

Table 8. Common Incidents leading to injuries or fatalities in Sugar Industry

Incident Description	Illustrative Quotes
Contact – Plant/ Person	"we have a lot of incidents with people /plant separation or plant to plant contact" [2]
Electrical Safety	"Fertiliser applicator last year touched a power line with one of the boom arms. It caused the applicator to be burnt." [1] "The smoke, heat and flame and is an absolute hazard underneath the 232 thousand volt transmission lines." [2] "Most of the time they probably don't hit the power line it arches out. So awareness that it is going to arch out even to a metre is important [and worthy of education]… or to isolate the issue. If the hazard is not there then they can't hurt themselves or bring down the power line… the simple way to stop it [during harvest] time is to barricade the area and not deliver bins underneath that power line… this eliminates or isolates the problem." [6]
Competence of workforce	"We end up with a whole bunch of labour hires, foreigners and inexperienced people there who are not familiar with it." [2] "5 of the incidents in the last 12 months have involved workers hired through labour hire agencies." [2]

Incident Description	Illustrative Quotes
Other factors	**Entrapment and guarding issues:** "mainly entrapment type things in machinery, like guarding issues, I suppose guarding and the use of power tools." [2]

Falls: "There would be the general just everyday stuff that goes on that sometimes don't get reported, just your trips and slips and all that sort of thing." [10]

"We have falls from machines. Incidents of people falling off a harvester, for example. Not necessarily fatal, but can be severe injury." [3]

Quad Bikes: [incidents heard of] "A lot of them are probably quad bike accidents."[10] No, we got rid of our quad bike. [Why did you decide to do that?] Just thought the buggy was a safer option." [10]

Fatigue: "The biggest problem within the industry is the shift system. So the mills crush 24/7. They send wagons out all day and night. A farmer haulout operator contractor has to fill those wagons when they turn up at the siding. So they might work all day. They might sleep and go to lie under their machine. Or just go home at say dark, and then they might be up there at four o'clock in the morning working again on the siding site. So that's a fatigue issue." [3]

Crush Injuries: "In the past there's been some crush-type injuries with people getting in the road of wagons particularly. But that, in the last few years, has been sorted reasonably well. Because the sugar mills themselves, who control the sidings, have put lots of procedures in place." [3]

Lifting: "Probably, yeah, electrical is one and probably the other one is lifting stuff because a lot of people probably don't lift stuff correctly. When they're shifting stuff around, they'll lift it up and just - yeah this will be right. Rather than having the proper chains - the proper lifting chains. That sort of thing I'd say is the major more safety concerns [I'd say]." [7]

"bag lifters" [9]

Other: "incidents that have occurred probably due to taking shortcuts really… this could include utilising machinery for the wrong application…using different implements to access things at heights. E.g. Shed roof." [6]

"A thing in this industry, and not in say cattle, is there aren't any fences. The boundary where you reside and your farm, which is your workplace, |

Incident Description	Illustrative Quotes
	there is no boundary. It is invisible. That is the challenge we have got. So obviously children can run around wherever they run around." [6] "Primarily, [injuries are occurring] it is the harvest. The harvesters will go to 6.3 metres or 6.6 at their maximum, depending on the machine, whilst they are in harvest operation. Whereas the haulouts some of these large tippers can go quite high 10-12 metres in the air. It is really a lack of using a safety observer or a lack of having a plan and not actually knowing where those power lines are." [8] "This season there was a guy who got a burn on his leg from a fire, a cane fire." [9]

There were indicated to be a number of overarching issues raised when participants were asked to reflect on WHS (

Table 9). These points of discussion were often intertwined with the identified barriers to adoption of WHS practices. Acknowledging that complacency is an issue, the motivation to engage with WHS is driven by a need to fulfill the requirements and the hassle of making these changes leads, generally, to a reluctance to implement large scale changes (Table 10).

Even when safety was seen as important, there was also a consideration of the balance of input and relative value, likened to an intangible return on investment. Excessive paper work, for example, was not seen to be valuable in terms of the demands on an individual's time relative to the safety improvements, such as changes in behavior, which are conferred from completion of the paperwork. Some of these comments were also extended when discussing the BMP WHS module (Table 12).

The need for a carefully balanced approach was suggested – such that if module completion were to become more cumbersome and paper driven the potential engagement would be stifled. The authors of the report acknowledge these concerns but the need for record keeping is mandated by the various regulations and acts, therefore this aspect is not directly amendable to change.

Table 9. Sugar Cane Work Health and Safety

Themes	Illustrative Quotes
WHS – Likened to minefield –	"Common thing with record keeping is plain and simple 'we don't have time to do it'. … It is a vital part of health and safety management program because it is the only defense they have got when things turn a little bit pear shaped." [2]
WHS – Minimum to comply	"…it is the bare minimum they want. Give me enough to meet my legal requirements." [3]
	"The information is really about what do we need to do to comply… Rather than what do we need to do to be safe." [2]
	"They are interested as they are concerned about the consequences of enforcement rather than actual doing it because they really want to be safe. They do want to be safe of course and they believe they are. But they are worried about the consequences of not doing the right thing." [4]
Size of Operation and Ownership	"I think safety is an important thing in the industry but it is grossly under looked particularly in small farms." [1]
	"Lot of issues farmers are on their own or with family. If they know the machinery, they know what they are doing. They know the problems and what it does. So they back off keeping everything up to standard as they know what to look for. But when you actually have an employee…that is when it starts becoming an issue and that is when you need to start looking at how to make all the implements safe for full use." [5]
	"Their compensation rate is say half the cattle industry. So in the comparison they don't have significant compensation rates in terms of the number of injuries. Because they're mostly self-employed…" [3]
	"We are working with him [a neighbour] to get the economy of scale and efficiencies involved [in production]."[9]
Speed of Changes	"People are changing with the times, but some will change quicker and some will take longer to turn over." [7]
Boundaries of Safety Discussions	"No. We never travel to our neighbour's site and tell him what to do. That's his business. It's not my place to go be telling anybody. If I'm working in the shed with somebody and we're working on something, safety gets discussed so if you're jacking something, it'll just be a say, look that's dangerous, let's stick something under that so nobody's going to get hurt. But no, you don't go to your neighbour and tell him what to do." [10]

Themes	Illustrative Quotes
Input and Value – Balancing the relationship	"No. Look, the only issue I have with it is we need to be careful where we go with it. Let's not make it too onerous and too hard for people to - we have enough restriction on us already. ... A lot of places that I've worked outside of the farm, you spend half an hour, three quarters of an hour filling out paperwork every morning and it's the same paperwork so basically by the end of the week all you are doing is ticking and flicking it, you are not taking any notice of what you are doing. You go out and you are doing the same thing that you were going to do regardless of that half an hour or three quarters of an hour you wasted in the morning anyway. So, that's the sort of track I don't want to end up having to go down." [10]

Table 10. WHS factors with a negative impact on safety or act as a barrier to WHS improvements

Themes	Illustrative Quotes
Incident needs to occur to remind	"I think every year there has been a safety incident that has involved a death or even serious injuries. It happens every year. So it travels along quite well but then something catastrophic happens. It is an issue and people are rather blasé about it until something happens." [1] "…people keep going on like they will until something bad happens…" [1] "It makes people a little bit more vigilant for a while and then the pressures of farming and getting everything done tend to take over I think." [1]
Competence and safety focus of workforce	"… an issue really when you have untrained people who are using equipment when they believe they are licensed to operate but they are doing silly things too. So it is not just a farm side of things. But also the contractors and the people they are employing as well to ensure that they are doing safety stuff." [1] "One of the things that is lacking, and it used to happen in the past, there was training programs that were competency based for both haulout and harvester operators. They used to be delivered by people like the Ag College, for example. That doesn't seem to happen now." [3]
Competing demands	"[WHS] is probably seen as a cost to the business. That cost might not be dollars, it could be time, energy. So I will prioritise my efforts into making the dollar rather than spending the dollar." [1]

Themes	Illustrative Quotes
	[when asked about risks in the industry] "I think it all does stems from the 'just get the job done' kind of mentality… always trying to save time and saving time is taking those shortcuts" [6] "So whatever we put in place it needs to be something that easy for us to work with. I've seen some of the workplace, health and safety their SWMS and all those sort of things - if we go down that track it's just - that's just crazy. I can waste the first hour of my day filling out paperwork and personally I don't think a lot of it makes a great deal of difference.' [10]
Compliance vs Importance of Safety per say	"I suppose they are trying to achieve minimal compliance rather than trying to go the extra step." [2] "The information is really about what do we need to do to comply. Rather than what do we need to do to be safe." [2]
Work cognitive demands – space for WHS	"It is important but given the nature of it and everyone is pretty busy so, like everyone else has said, it is not one of the main focuses. Focusing on trying to get the cane off and filling the bins. Getting in operators more than doing different inductions and things. Which is all good when you have good crews who are experienced in that. It goes on the backburner if you have a good crew who has been there a few years and there hasn't been any major issues so it 'all good'. You do notice it a bit more when someone new comes on." [1] "It's probably a bit of a catch 22 - we all need to stay safe and we can always do things better, but sugar cane is not really a sexy industry at the moment. There's not a great deal of money in it, you start sticking constraints on people to start putting in workplace health and safety programs - that all comes at a cost and I know you can't put a cost on a life but it's something that we need to be careful of, how we implement… it needs to make a difference and it needs to be something that is not putting a great deal of pressure on the guys that are trying to do a job that is really difficult at the moment already.." [10]

Themes	Illustrative Quotes
Complacency	"Oh yeah electrical, there is a few electrical – probably - safety issues, but I still think our biggest issue is complacency. We've been doing the same thing for this many years, this way here, it's very hard to show someone else there is probably a safer way to do it. That's probably my biggest - I'd say is your biggest stumbling point in the industry." [7] "The other one is just sheer age of the demographic you're dealing with. You're dealing with - our industry - most of it is elderly growers. They, like I said to you before, it's very hard to change when they have been doing it the same way for so long. So that's the major, it's, I'd say, age and complacency that would be the two major barriers to change." [7]
Incident Preventability	"But yeah, you can only do the best you can and if something - if an act of God happens, well, we'll have to deal with the consequences after. But you've got WorkCover and you've got all your other public liabilities in place for that reason, hopefully to never to have to use it, but you try and keep your employees as - in a controlled risk environment to the best of your ability. But if someone has a brain snap there is not much that you can do about." [7]
Awareness of Incidents – Potential for insights	"…you don't necessarily hear everything that happens. You only hear the serious ones because the other ones are not recorded or reported." [6] [speaking of a recent fatal incident] "one wonders was there a plan? Was it a deployable plan? Where was the plan to do what he was doing?" [6] "I don't necessarily think the mentality has changed [within the industry]. Again, it's hard to judge these things because you don't get it all the near misses. You don't get all the first aid. You only get the reported incidents." [6]
Cost of higher order controls	[asked if use hierarchy of control approach] "Yeah…we really need to start targeting the top three or four and we need to continue targeting. But the top three really cost a bit of money which sometimes doesn't have the investment it really should." [6]

There were factors that had a positive impact or influence on safety and could under the right circumstances be leveraged to facilitate WHS improvements (

Table 11). Understanding the lack of separation of the work site from the household and family could stimulate a desire to ensure the farm is safe for all. Typically following a WHS incident in the district, at the neighbours or on one's own enterprise there was a window of opportunity when people are reflecting on WHS and trying to avoid similar events in the future. Using these events as lessons for all, whilst being sensitively handled, could prove useful. Providing practical suggestions for change that address the risk or hazard, providing risk management training and, depending on the event, using these events to lobby for change and safety investment within the industry are potential options. Interestingly, there was limited articulation of the productivity benefits that exist when WHS is championed and injuries are actively avoided. Perhaps this is a hard won lesson that draws upon personal experiences.

Table 11. WHS Factors with a positive impact/influence on safety or act as an enabler to WHS improvements

Themes	Illustrative Quotes
Understand importance of WHS – For self and others	"The ones about your family and them waiting for you to come home; They always hits home for me. I suppose it is more about your family than yourself. The people who are relying on you not to put yourself in danger. Make sure you are doing the right thing. Stop and take a couple of minutes to have a look, have a walk around and that kind of thing. It is hard to change or get into that mode of checking things over." [5] [What motivates people to take up healthy and safety on their property?] "I think family. I suppose what I think we need a big push in further is that these farms are workplaces and you have got your kids and/or your grandchildren running around these farms. So that is one angle, you want to have a safe workplace if your children or grandchildren are around the farm. But also that you want to be around so that you can share your time with your grandchildren. You work hard to earn a living but you also want to work hard so that you can spend your time with your family too. [when asked if this is an issue for different sized farms] No it doesn't matter what size your farm is, family is still a big part of it." [6] "Our farm manager, he is always about safety on the ground. He isn't talking about it but he is looking for it. He is watching out for it. He is always talking to the men saying 'Don't do it this way, do it this way' or 'watch out'. … He isn't wearing it like a badge of honour but he is going about as his business and trying to make a safe environment for the guys." [9] "I think most growers out there have some respect for safety." [11]
Salience following incident	"People pretty keen to do things after there has been a fatality for about a month or so. Then wanes off until next time." [2] "Even now, before the start of next crush I'll put a few more things into my site induction thing from the start just to help [given recent incident]." [7] "[What do you say to those (high levels) guys at an industry level (who may be complacent about safety) what is your conversation] That is a tough one as it depends on the grower. It depends on the farmer. It depends on what their reception is and their experience is. Their own experiences in the sense of incidences or serious incidences. I think the people who are involved in a serious incident they realize that hey we need to do something here. Not necessarily, that they know how to or they wear that banner. But if you mention it to them, they go 'well yeah I remember that happened and maybe we should do that or we can do this'. You need to

Themes	Illustrative Quotes
	tailor it to different people and their receptiveness to it and maturity to it. There are various levels of safety maturity." [6] [If the power line is hit on a property a couple of times, does that mean you start to think about moving them or people just go in and put it back up or what is the process?] "To be honest not a lot of people hit them twice. As humans we tend to learn from our mistakes. Our policy at the moment when a power line is hit is we go in and obviously rectify and get the power back on. Part of that rectification is to give the land owner some safety advice so they need to stay three metres away, that is the exclusion zone." [8]
Role of industry groups	"[details longer term plan] is to get [this person] to their workshops, sheds, machinery and starting to do some audits with them. Putting together a risk assessment that is not too exhaustive … [in essence] trying to educate them on the farm…do the risk assessments with them and [emphasized] follow it up." [6]
Showcasing good examples	"Tap into guys who do it well – call them champions if you want to use their terms. Use their experience to influence a few of the others." [2] "Within communities, some of the growers have a developed a system that has permeated through the community.' [4] Example: *"I used to send the checks out every Monday morning and just highlight a couple of the issues. Whether it be heat or snakes on the move. … I give them a little reminder. Remember this – be safe. Look for the power lines. Make sure your lights are working at night. Just little things like that. Just to keep them thinking all the time."* [5]
Timing for workshops/ discussions depending on the time of the season	"Feb to May. For a start at the end of April. If you picked it right – March somewhere there before things are kicking off. Dropside analysis or hazard stuff and other safe work operating procedures and that hopefully as they start to get into the season are doing different things with it fresh in their minds. Might stick and get implemented a bit more than when they are busy thinking about other things. It is a fine line when there are a lot of other meetings and bits and pieces. It is just trying to work it in with everyone else but that is pretty well the best time I think." [1] "They are going and going and going. It almost needs to be like a …you could say alright we are going to do a workshop now because we have got 60-70 mil of rain and everyone has just stopped." [1]

Themes	Illustrative Quotes
Infringements – Big stick approach	"Infringement to a harvesting contractor few years ago for a power line strike – word spread around." [2]
Big Business/ Corporate approach to safety	"They [big businesses] are predominately from down south where they have grown cotton or something else. [They] come up and they already have their procedures and stuff in place because they have worked in that sort of area before." [1] "… Although corporate businesses are starting to come in now which have safety protocols. But many of the smaller farms there is nothing if anything." [1]
Other industry influence	"Benefit from mining boom – cashed in on the money but also picked up a bit of safety knowledge while out there as the mining industry has those safety systems in place. Until you get exposure to another industry you view the world as a fish bowl." [2] "It is when you see guys who have been outside the industry and they come into it, they are used to WHS. They are used to all of the checks, they are used to signing in." [5] "I have worked in other industries in my trade, so I do have some sort of idea of workplace health and safety goes through in larger industries and workplaces, so I do try to implement that to a certain degree but when it is a private concern it is different." [10] "The machinery has become safer. [The industry] has become safer in that sense. Technology has probably helped the industry to become safer. That's not to say that is where it should be but I think that plays a bit of a part." [6]
Avoiding injuries is positive for productivity	"If they are actually injured or hurt. From a business point of view, we have lost a man, we have lost time. There are a lot of issues. Although obviously the main thing is them getting hurt. Your downtime from injuries." [5]
Potential to shape new employees	"So I would say that's the biggest - because most of them - most of the - not that many young people are coming in to the industry. But the younger ones, you've got a chance of showing them something different straight up, because they don't know any better." [7]

Themes	Illustrative Quotes
Motivation to Change and factors that can facilitate	"Yeah, well, it still comes down to the person who you're trying to get to change their ways has got to want to change their ways. Otherwise you can drum it in until you're blue in the face and if they don't - if they've got no interest or think it doesn't apply to them, they are not going to change. But there's always - if you dangle a carrot of financial assistance or something it might help speed the process up." [7]
	"I'm sure if you're employing people the ramifications of somebody having an accident are serious so if you are employing people, I'm sure that these days, guys are going to be more aware of their obligations than the guy that's just working for himself." [10]
	"Look, we are always happy to take any assistance from government at any time because it's normally few and far between any assistance we get from governments." [10]
	"Program needs to be put together that is as practical as possible rather than theory orientated." [6]
	"My thoughts are I don't want any problems, or I don't want any issues and I don't want anyone to get hurt. So I want to make sure that people are trained properly. So I want to make sure that the guys who are undertaking the training are serious enough to make them ensure people are trained properly. I think that workplace health and safety for me, is a bit of a stick that I use in that regard. So I can say that our WHS policy says these people must be trained in such a way, they must be able to cover off on these points and I want you to sign this document and I want them to sign this document to acknowledge it and it must come back to the office. I am using it in an authorative way to get my own way mainly [to avoid incidents]." [9]
WHS Information Sources	"Well, we can go through our normal Canegrowers office and they can go to the appropriate people to get back to us or get us in contact with someone. That would probably be my first go to and depends probably where if it was a workplace health and safety incident…" [7]

Table 12. BMP Modules – General Overview

Themes	Illustrative Quotes
Focus is on core modules – driven largely by fact labelled as 'core'	"When spoken to some growers about the safety part of it they really didn't seem that interested as it wasn't something they had to do. They didn't see safety as something they had to do." [2] Haven't done WHS module yet. [*Why?*] "Because they have been pushing the three main ones." [5] "No only done the first three module and accredited on them." [Why haven't you gone in to do the others?] "Umm well probably should of but probably lack of time at the moment. Knowing that the first three were the most critical for now. As far as what the government were expecting from growers and highlighting that they needed to be completed first." [11]
Embedding WHS into all modules	"I think what is important to note, in saying that, there is already some WHS in our core modules. Particularly relating to the chemical sheds and the provision for, storage of and SDS sheets and all of those sort of things. So one of the things we are looking at is how to embed more WHS into our core modules. How do we cover it as a course of business and not individually. It is about giving you guys the insurance that having it in there it complies." [1] "It isn't about saying we need to get everyone a degree in WHS to assist growers." [1] "Oh look, it could be integrated in to the first three. From what I've seen of that safety module it's not a big thing to get through." [10] [When asked how would you feel about integrating the WHS module in with the first 3 modules?] "There wouldn't be any harm in that, it would probably be a good benefit to most growers." [11]
Use of risk assessment	"They start to think about risk assessments and hazard mapping and all of that just prior to the harvest season. It is a fine line between 'plan it and put it in the drawer' and 'plan it and use it'." [1]
Perception of BMP	"BMP from the growers' point of view is 'Give me the bare minimum so I can get through it'." [5]
Making it mandatory	"If we want to get serious about it." [6] "… It would also be good to get growers doing this off their back. I want to do that safety module, I want to learn about that and I want to do something about it. Putting some kind of target percentage against it so that every year we are going to strive to get everyone through this, even if you aren't a BMP grower. Because if the only safe ones are the BMP growers then we are in trouble, you know."[6]

Key Findings

- Incidents occurrence is influenced by the competence of the workforce and fatigue but include mechanisms such as electrical, falls and lifting/lifters issues.

- Broad WHS concerns are the difficulty of navigating legislation, determining the minimum to comply and implications based on the size of operation and presence of employees.

- Change is occurring but is typically a slow process. Change and willingness to change happens along a continuum and having targeted information to suit the different stages will be more useful than a blanket approach.

- Navigating safety discussions seem to be generally confined to your own operation with a general reluctance to tell others what to do as this is out of place outside of your own property.

- Concerns were raised about making WHS procedures too onerous and impractical. Principal to this is the many often competing demands on the growers' time and resources.

- Incidents often serve as important reminder, increases vigilance (initially) and could be leveraged for safety advancement and industry communication.

- Workforce competence, including of contractor employees, and mechanisms to enhance competence are important.

- Acknowledging complacency is an issue and attempting to interrupt this when it is noted to occur.

- WHS can often be perceived as a cost but flipping this narrative to show that WHS supports work processes and productivity. Clear demonstrations of this in practice might be useful.

- Thinking about who WHS benefits – employer, employee, families and the larger community. Reflecting on this and prioritising returning home at the end of day can often be an emotive but compelling message.

- Showcasing good examples and hoping these can permeate to others.

- Drawing on lessons from other industries, utilising the experience others have gained when working in other industries for the benefit of practices in the sugar industry. Central to this is an acknowledgement of why these practices have been implemented elsewhere.

- Knowing where people go to seek out safety information and what prompts this help seeking behaviour can ensure there are appropriate safety resources in place.

Recommendations and Next Steps

"Safety is not an intellectual exercise to keep us in work. It is a matter of life and death. It is the sum of our contributions to safety management that determines whether the people we work with live or die." Sir Brian Appleton [in response to the Piper Alpha oil rig explosion].

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BMP Content – Workplace Health and Safety Specific

As workplace health and safety is a legislative requirement it is recommended that the Smartcane BMP program be updated so that it enables users to meet their WHS legislative requirements either by:

1) Incorporating the WHS material into the first three compulsory modules, or
2) Making the WHS module part of the core modules (i.e. module 4).

This process would require a transition period and should be supported by the Workplace Health and Safety Queensland. There were a number of areas identified which required updating / including which should be incorporated as part of the changes. A section identifying time-frames and having an aspiration goal stated would add value.

Presently the practices are listed, often with multiple components grouped together, there is an absence of discussion of key issues impacting the industry such as fatigue management. Remedying these issues, should be prioritised. It should also be noted that growers accessing the information will have variable knowledge about WHS and as such this needs to be taken into consideration when updating Smartcane. To address the various knowledge bases that growers enter BMP with it is suggested a safety knowledge hub be made available either as a part of BMP or linking in to existing resources (such as listed in the Factsheet [Appendix 5]). This would provide valuable information about 'how to' address WHS issues.

Best Management Practice Facilitators – Opportunities

There is a need to increase support and engagement around WHS to help the facilitators champion its importance. This could be via the engagement of specialised WHS advice, this would alleviate the need for specialised, intensive training for facilitators.

Facilitators are not expected to become safety specialists, however enhancing the potential for WHS specific professional development, support, training and mentoring opportunities would likely be useful in addressing facilitator comfort. This support should ideally be offered initially to all facilitators with top up opportunities available as required. Enabling facilitators to feel comfortable to refer individuals on to WHS competent safety professionals should also be prioritised.

Championing Workplace Health and Safety

There is a need the industry to develop evidence based, up-to date information materials to help the sugar cane industry meet its WHS legislative requirements. This should include further work exploring compensated injuries and how these could be prevented, development of 'how to' guides, case studies, fact sheets and information sessions to inform prevention actions. This could include using incident windows (i.e. following an event) to educate and provide incentives (subject to funding) for growers to make change based on the previously developed resources.

Conclusion

Given the importance of WHS and the legislative requirements, managing WHS risks is a core element of best management practice. As such, embedded WHS content into the existing

compulsory modules and/or making the stand alone WHS module compulsory would underscore the importance of WHS. Ensuring the safety benefits are conferred to the industry will require meeting legislative requirements and aspiring to better existing industry standards.

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Appendices

Appendix 1. Ethics Approval Form - Original

James Cook University

JAMES COOK UNIVERSITY AUSTRALIA

Townsville Qld. 4811 Australia
Human Research Ethics Committee
Research Services Ph: 47815011; Fax: 47815521
email: ethics@jcu.edu.au

Human Research Ethics Committee *APPROVAL FOR RESEARCH OR TEACHING INVOLVING HUMAN SUBJECTS*	Application ID **H7981**

PRINCIPAL INVESTIGATOR	Richard Franklin
COLLEGE	Public Health & Tropical Medicine
CO-INVESTIGATOR(S)	
SUPERVISOR(S)	
PROJECT TITLE	Improving health and safety in the cane industry

APPROVAL DATE:	18/12/2019	**EXPIRY DATE:**	30/06/2021	**CATEGORY:**	1

This project has been allocated Ethics Approval Number H7981, with the following conditions:

1. All subsequent records and correspondence relating to this project must refer to this number.

2. That there is NO departure from the approved protocols unless prior approval has been sought from the Human Research Ethics Committee.

3. The Principal Investigator must advise the responsible Human Ethics Advisor:
   - periodically of the progress of the project,
   - when the project is completed, suspended or prematurely terminated for any reason,
   - within 48 hours of any adverse effects on participants,
   - of any unforeseen events that might affect continued ethical acceptability of the project.

4. In compliance with the National Health and Medical Research Council (NHMRC) "National Statement on Ethical Conduct in Human Research" (2007), it is MANDATORY that you provide an annual report and a final report on the progress and conduct of your project. This report must detail compliance with approvals granted and any unexpected events or serious adverse effects that may have occurred during the study.

Human Ethics Advisor :	Parison, Julie
Email :	Julie.Parison@jcu.edu.au

This project was Approved by Executive on 18 Dec 2019

Dr Anne Swinbourne
Chair, Human Research Ethics Committee

Approval_Form_H   Printed on 18 Dec 2019

Appendix 2. Project Information Sheet

JAMES COOK UNIVERSITY
AUSTRALIA

INFORMATION SHEET

PROJECT TITLE: Improving Health and Safety in the Cane Industry

You are invited to take part in a research project about work health and safety, the online training modules in the Best Management Practice – SmartCane program and factors which support BMP and safety participation. There are a number of modules that form part of the BMP- SmartCane program of which a workplace health and safety (WHS) is one. This project will explore the barriers and enablers to work health and safety generally, the barriers and enablers to completing the BMP program and to engagement in the WHS specific module. We are interested in addressing the barriers and to know what might support increased engagement of this program within the sugar industry. The study is being conducted by Associate Professor Richard Franklin.

If you agree to be involved in the study, you will be invited to participate in an Interview. The Interview, with your consent, will be audio-taped, and should only take approximately 30 minutes your time. The Interviews will be conducted either over the phone or via the internet (e.g. Zoom or Skype). The key points of discussion at the Interviews will be around the barriers and enables to WHS will inform a workshop presented to BMP facilitators and those working in WHS to help enhance the uptake of WHS.

Taking part in this study is completely voluntary and you can stop taking part in the study at any time without explanation or prejudice.

If you know of others that might be interested in this study, can you please pass on this information sheet to them so they may contact me to volunteer for the study.

Your responses and contact details will be kept strictly confidential. The data from the study will be used to improve WHS, in research publications, a project report and information for wider dissemination such as media releases and social media. You will not be identified in any way in these publications.

If you have any questions about the study, please contact – Associate Professor Richard Franklin.

Principal Investigator:
Associate Professor Richard Franklin
College of Public Health, Medical and Veterinary Sciences
James Cook University
Phone: 4781 5939
Email: richard.franklin@jcu.edu.au

If you have any concerns regarding the ethical conduct of the study, please contact:
Human Ethics, Research Office
James Cook University, Townsville, Qld, 4811
Phone: (07) 4781 5011 (ethics@jcu.edu.au)

Cairns - Townsville - Brisbane – Singapore
CRICOS Provider Code 00117J

Appendix 3. Interview Consent Form

JAMES COOK
UNIVERSITY
AUSTRALIA

INFORMED CONSENT FORM - Interview

PRINCIPAL INVESTIGATOR	Associate Professor Richard Franklin
PROJECT TITLE:	Improving Health and Safety in the Cane Industry
COLLEGE:	College of Public Health, Medical and Veterinary Sciences

I understand the aim of this research study is "to explore the barriers and enablers to work health and safety (WHS) including the use of the Best Management Practices (BMP) program, improve the relevance of the BMP WHS content for sugar cane production and improve the supporting resources that encourage BMP participation". I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written information sheet to keep.

I understand that my participation will involve an *interview* and I agree that the researcher may use the results as described in the information sheet.

I acknowledge that:

- taking part in this study is voluntary and I am aware that I can stop taking part in it at any time without explanation or prejudice and to withdraw any unprocessed data I have provided;

- that any information I give will be kept strictly confidential/anonymous and that no names will be used to identify me with this study without my approval;

(Please tick to indicate consent)

I consent to be interviewed		Yes		No
I consent for the interview to be audio taped		Yes		No

Name: *(printed)*	
Signature:	Date:

Appendix 4. Semi-structured questions

- Interview Questions (revised slightly)
  - Hello and welcome – who are you and what is your involvement with the sugar industry.
  - Has you been injured while working in the past 10 years? (If no then do you know someone who has?)
    - Would you be willing to tell me what happened, i.e. what you were doing at the time, what injury did you sustain (body location, type), time of day / week / month / year, production activity / process, how do you think it could have been prevented?
    - If no injuries — then — Have you had a near miss while working in the past 10 years?
      - Could you tell me what happened and how it could have been prevented?
  - What do you think are the major safety and health risks in the sugar industry?
  - How would you describe your current approach to health and safety and how would you describe it more widely for the sugar industry?
    - Prompting (i.e. seek out information, people don't do anything, actively engaged, important but not the most important, have a business plan which it is part of...)
    - What motivates you to ensure there is health and safety activities on your property? (Prompts if needed – my family, safety in general, legal issues...)
    - How much control do you feel you have in managing health and safety on your property? What things strengthen or decrease this control for you?
  - What would you say are your health and safety principles (by this I mean what do you do to ensure your safety and those who work for you or with you)?
  - Have you noticed changes to health and safety practices over time (a) on your farm (b) within the industry more widely?
    - And if so what were the changes and when have these occurred?
    - What do you think stimulated these changes?
  - What do you see as barriers to the implementation of health and safety?
  - What do you see as benefits to the implementation of health and safety?
    - What would help you to implement health and safety initiatives? (Prompts — financial assistance, personnel assistance?)
  - What do you see as benefits to the implementation of health and safety for others in the sugar-cane industry?
    - What do you think would help others in your industry to implement health and safety? / What could government do? / What could the industry bodies do?
    - What areas of research do you think are required?
  - Do you think that having a BMP module on health and safety is useful?
    - Have you used / know of the module (why / why not)
    - What would make you use the module
    - What would make other use the module
    - What else about the module would you like to let us know about?
  - Where do you go to find out about health and safety?
    - What is the preferred method of delivery of information that would assist you in identifying health and safety hazards on your business? For example — would you prefer an industry specific information book or a monthly newsletter discussing safety tips?
  - Do you ever worry about the implications of an injury or fatality occurring in your business? The sugar-can industry?
  - How confident are you that you can implement health and safety change within your business?
  - What do you do to keep children and visitors safe on your property?
  - Do you intend to take any action within the next six months to improve health and safety in your business?

Appendix 5. Work Health and Safety Factsheet

Work Health and Safety in the Sugar Cane Industry

The sugar industry is an important contributor to Queensland economy. Maintaining profitability and productivity is dependent on having a safe workplace. Often work health and safety (WHS) can be viewed from the perspective of it being adjacent to or an impediment to regular business practice. WHS enables identification and management of risks present in the industry and workplace. This has benefits for profitability, productivity and longevity of production.

Industry led efforts, such as Smartcane BMP, have highlighted the importance of WHS as being an integral component of best management approaches. The development of 'safe systems' approaches to WHS highlights the people, tasks, equipment and environment are all components of the system. As such, there are various interacting parts that should not be considered in isolation. Understanding the legal obligations to provide a safe workplace is a requirement under the Work Health and Safety Act 2011. The following links, functional as at December 2020, have been provided to assist you in sourcing information about WHS, tools and improvements that can be made to your workplace.

Work Related Injury Experiences in the Sugar Cane Industry

Compensation Claims Timeframe: 1 June 2009 to 31 July 2019
Total Number Claims: 475, average of 47 injuries per annum.

Case Numbers: Rising over Time.
Payment for Compensated Injury: $8 million over the period with an average cost of $16,894 per incident.

Understanding your WHS Obligations

WHS Act: The object is to protect workers and other persons against harm, and promote safety and welfare through the elimination or minimization of risks arising from work or particular types of substances or plant.

Duty of Care: the legal requirements a person conducting a business to promote health and safety of workers, people and, if self-employed, themselves. Workers also have responsibilities.

Central to this duty of care is a consideration of the **likelihood** of hazards and risks occurring, **degree of harm, what people know** (or reasonably ought to know) about the hazard or risk, **ways of eliminating** and the **availability and cost** of eliminating or minimizing the risk (control measures). A consideration of risks and controls is important.

WHS Tools

Managing Risks:

Figure 1. Risk management process [Safe Work Australia]

Completion of risk management plans and updates (as required) of the plans assist in fulfilling part of the WHS requirements. However there are other aspects such as developing a health and safety policy, work procedures, keeping and maintain training and incident records.

Safety Fundamentals Toolkit and (Sugar) Model Codes of Practice - Guide users on their legal obligations in a digestible format.

WHS System Improvements

Developing a safety culture means that an industry or a workplace values safety and considers it fundamental to business success. As such all business decisions and processes actively prioritise safety.

Safety systems understand the many elements that all play a role (positive or negative) in contributing to the system. The human factors as part of this system have an important role to play in recognizing safety concerns and taking action to control the risks. It is imperative that everyone plays a role in identification and addressing WHS issues as they arise. This includes management and workers.

A safe and healthy work environment is **created**, with continuous opportunities for improvement.