



Central Region sugarcane management practices

ABCD Management Frameworks

A 'path for improvement' for growers and the extension staff who support them

2010–2011



This publication has been compiled by Raylene Hansen of Regional Delivery, Department of Employment, Economic Development and Innovation.

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Introduction

The *Central Region sugarcane management practices: ABCD management frameworks* document has been designed to support the identification and validation of cane management practices that can improve both end of catchment water quality and marine ecosystem health as identified in the Water Quality Improvement Plan (WQIP), (Drewry, J., Higham, W., Mitchell, C. 2008). A pivotal stage in the WQIP process was the development of the ABCD framework. The ABCD framework was designed to highlight and facilitate communication about the different levels or standards of management practice (as opposed to resource condition) within the cane industry for different water quality parameters (i.e. sediment, nutrients and chemicals). The classification provides a definition and a scale of improvement from dated to current best practice through to future aspirational or new and innovative practices. Although soil, nutrient and pesticide management practices are the focus of the WQIP, this document has included irrigation, financial/business, WHS and harvest management practices.

Over time, changes in knowledge, technology, costs and market conditions may validate new and innovative Aspirational practices so they eventually become best management practices.

If these practices are widely adopted and become the new industry standard, they may become Conventional practices within an ABCD framework. Considerable effort was undertaken to consult with cane industry partners when developing the ABCD framework (Appendix one). However it must be noted that there may be a need to adopt practices across several classification levels to successfully manage and operate farming enterprises on a year to year basis.

While the focus of the outcomes associated with practices outlined in this document is toward the enhancement of end of catchment water quality and marine ecosystem health, the practices identified must also be quantified in terms of their economic and social benefits to the individual land managers and the broader community prior to being adopted as the most suitable practice solutions.

The WQIP specifies the current resource condition, resource condition targets, and timeframes, as well as the year of reference for the level of classification. This provides a common reference point and allows the framework to be used to communicate to water quality researchers, social scientists, economists, industry research and extension organisations, and land managers information on:

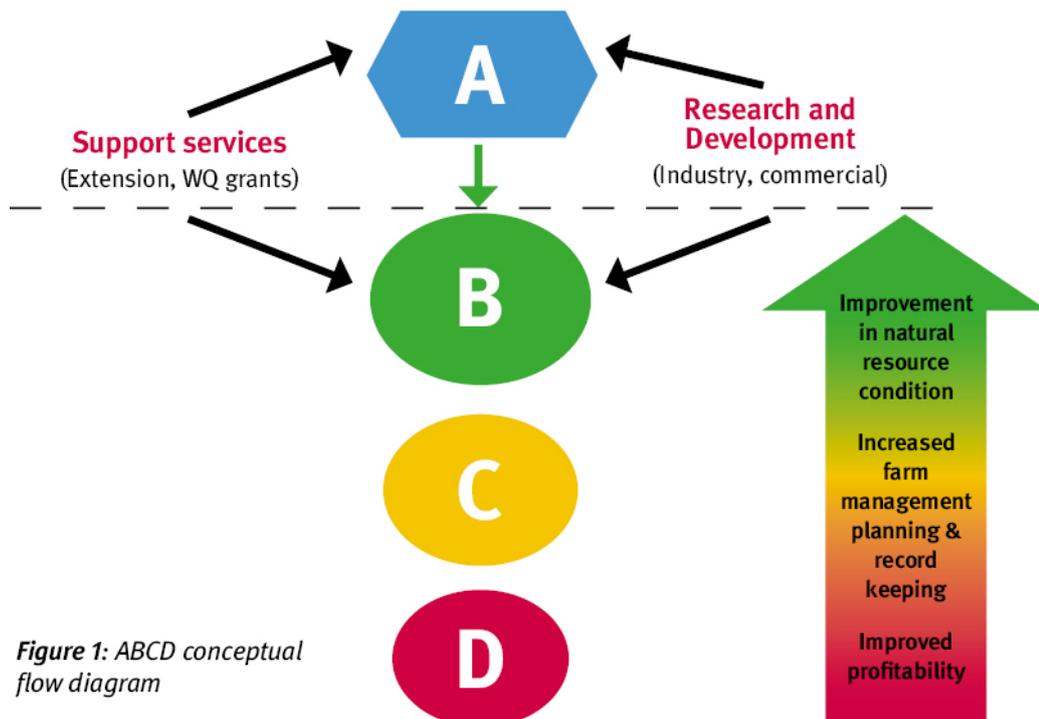


Figure 1: ABCD conceptual flow diagram

- The level of water quality improvement that can be achieved through improved management practices;
- The social and economic costs and benefits of adopting improved management practices;
- The level of adoption of management practices required to achieve the Water Quality Targets;
- The emphasises on the importance of detailed farm management planning and record keeping to achieving improved resource management, rather than a single technology or individual practice.
- The type and scope of action such as Market Based Incentives (MBIs) required to achieve Water Quality Targets

The WQIP and this booklet is regularly reviewed and updated to ensure:

- the wording of the classification descriptions match current industry terminology;
- resource condition indicators have been defined;
- the link between the resource condition indicators and the level of practice validated and
- action required to move from one level of management to another level of management further defined.

Table 1 Management classes and definition for ABCD framework for management practices

Class	Description of practice	Effect on resource condition
Aspirational	<ul style="list-style-type: none"> • New and innovative practices adopted by growers that require further validation to determine industry wide environmental, social and economic costs/benefits. • Validation requires R&D and if appropriate, some validated practices will become recommended BMP. • Development of Farm Management Plans and utilisation of new and innovative technology. 	<ul style="list-style-type: none"> • Validated practices likely to achieve medium to long term target resource condition goals if widely adopted. • Some practices may have good environmental outcomes which may not be universally endorsed as feasible by industry and community.
Best practices	<ul style="list-style-type: none"> • Currently promoted practices referred to as ‘Best Management Practices’. • Widely promoted by industry to achieve current and future industry expectations and community standards. • Development of Farm Management Plans and utilisation of common technology 	<ul style="list-style-type: none"> • Practice likely to achieve short to medium target resource condition goals if widely adopted.
Conventional	<ul style="list-style-type: none"> • Common practices widely adopted by industry but meet only basic current industry expectations and community standards. 	<ul style="list-style-type: none"> • Practice unlikely to achieve short term target resource condition goals if widely adopted.
Dated	<ul style="list-style-type: none"> • Practices superseded or unacceptable by current industry expectations and community standards. 	<ul style="list-style-type: none"> • Practice likely to degrade resource condition if widely adopted.

Soil management practices for cane are summarised in table 2. Current practice is likely to be a mix of all the practices in the table, although the green cane trash blanket practice is likely to be adopted by about 80% of farmers in this region.

As cane soil management progresses to B and A class there is increasing precision in management of cultivation and controlled traffic

to minimise impacts of compaction and erosion. Controlled traffic, for example, is nonexistent in D and C class management, while B class includes controlled traffic, and A class includes controlled traffic with GPS guidance of all operations. D and C class includes cultivated plant cane while B and A class includes strategic or zonal tillage for plant cane.

Table 2 Soil management practices for cane classified in the ABCD framework

Dated cane soil management Practices that are superseded or unacceptable	Conventional cane soil management Farming practices that meet minimum expectations
<p>Description:</p> <ol style="list-style-type: none"> 1. Cultivated bare fallow 2. Fully cultivated plant cane 3. Cultivated ratoons <p>Planning and record keeping:</p> <ol style="list-style-type: none"> 1. Records kept in head <p>Machinery:</p> <ol style="list-style-type: none"> 1. Standard equipment 2. Machinery and equipment does not match crop row spacing 	<p>Description:</p> <ol style="list-style-type: none"> 1. Minimum till bare fallow with chemical weed control 2. Rotational crops may be grown 3. Reduced cultivation of plant cane replaced by strategic chemical weed control <p>Planning and record keeping:</p> <ol style="list-style-type: none"> 1. Written records kept <p>Machinery:</p> <ol style="list-style-type: none"> 1. Standard equipment 2. Machinery and equipment does not match crop row spacing
Best practices cane soil management BMP currently promoted by the industry	Aspirational cane soil management Innovative practices that require further validation
<p>Description:</p> <ol style="list-style-type: none"> 1. Controlled traffic permanent wheel tracks matched to harvesting machinery wheel centres 2. Initial row establishment formed with Global Positioning System (GPS) guidance as a minimum 3. Rotational crops grown on all fallow where practicable 4. Strategic or zonal tillage of fallow crops and plant cane 5. Strategic ripping of wheel tracks in ratoons, only when necessary 6. Headlands, drains and waterways managed as filter strips <p>Planning and record keeping:</p> <ol style="list-style-type: none"> 1. Identify soil types and productivity zones using existing maps, digitised mill data and other technology 2. Technology for spatially identifying problem areas 3. Develop computer skills enabling access to digital mill data and Geographic Information System (GIS) software 4. Develop basic 'Soil Management Plan' utilising soil mapping (slope, soil type, flooding, specific soil problems) 5. Records kept in paddock journal and/or electronic data capture <p>Machinery:</p> <ol style="list-style-type: none"> 1. Matched wheel spacing for planting equipment based on harvesting machinery wheel centre measurements 2. GPS guidance on row establishment equipment 3. Zonal tillage equipment 4. Rotational crop establishment equipment 	<p>Description:</p> <ol style="list-style-type: none"> 1. Everything as for Class B plus the following 2. Controlled traffic permanent wheel tracks with GPS guidance of planting, zonal tillage, harvesting and haulout machinery 3. Site specific application of ameliorants 4. Reduction in harvesting impacts <p>Planning and record keeping:</p> <ol style="list-style-type: none"> 1. Spatially identified soil types and management zones across blocks and farms utilising remote sensing and Electro Magnetic (EM) soil mapping technology 2. Integrate a spatial based Soil Management Plan, addressing Land and Water Management Plan (LWMP), or current environmental risk management criteria 3. Geo-referenced spatial data captured in GIS software systems 4. Records kept in electronic data capture 5. Production of harvester yield maps <p>Machinery:</p> <ol style="list-style-type: none"> 1. Matched wheel spacing on all equipment based on harvester centres 2. GPS auto guidance systems on bed-formers, planting equipment and harvesting machinery including haulouts 3. Automated base cutter height fitted to harvester 4. Yield monitors fitted to harvester

The use of equipment as defined in this table can be owned individually, share-owned, or contracted.

Nutrient management practices are summarised in table 3. As cane nutrient management progresses to B and A class there is increasing precision in management of nutrient inputs to optimise the supply of nutrients to the plant. For

example, with D and C class there are only one or two nutrient rates for the farm, while for B class management nutrient rates may vary between blocks. In A class nutrient rates may vary within blocks.

Table 3 Nutrient management practices for cane classified in the ABCD framework

Dated cane nutrient management Practices that are superseded or unacceptable	Conventional cane nutrient management Farming practices that meet minimum expectations
<p>Description:</p> <ol style="list-style-type: none"> Current application rates based on historic application rates or rules of thumb <p>Planning and record keeping:</p> <ol style="list-style-type: none"> Records kept in head <p>Machinery:</p> <ol style="list-style-type: none"> Surface fertiliser box 	<p>Description:</p> <ol style="list-style-type: none"> Sample representative soil types prior to planting Application rates based on soil test analysis and current industry recommendations (e.g. 6 Easy Steps nutrition guide) If surface applied, irrigated / cultivated into soil where possible <p>Planning and record keeping:</p> <ol style="list-style-type: none"> Conduct soil tests Develop basic nutrition management plan Written records kept <p>Machinery:</p> <ol style="list-style-type: none"> Surface or sub-surface fertiliser box (granular)
Best practices cane nutrient management BMP currently promoted by the industry	Aspirational cane nutrient management Innovative practices that require further validation
<p>Description:</p> <ol style="list-style-type: none"> Geo-referenced soil sampling in key soil types in blocks prior to planting each year, which may include more comprehensive sampling eg. A and B horizon at the same site Application rates based on latest industry recommendations taking mill by-products, compost, other organic nutrient sources and block history into account Application of mill mud/mud ash should not exceed crop cycle nutrient requirements Timing nutrient applications with respect to crop stage, and rainfall probabilities Incorporation of surface applied fertiliser, and as soon as practicable, within seven days, using overhead irrigation that does not result in runoff <p>Planning and record keeping:</p> <ol style="list-style-type: none"> Identify soil types/productivity zones for each block Develop Nutrient Management Plan using varieties, yield, soil mapping and latest industry recommendations Change fertiliser rates between blocks where identified Conduct leaf analysis if required As a minimum, calibration of fertiliser applicator should occur with change of product or application rate Records kept in Paddock Journal and/or electronic data capture <p>Machinery:</p> <ol style="list-style-type: none"> Ability to adjust rate for granular or liquid applicators Granular applicators must have capacity for sub-surface application 	<p>Description:</p> <ol style="list-style-type: none"> Geo-referenced soil sampling in identified, specific zones in blocks each year, which includes more comprehensive sampling eg. A and B horizon at the same site Apply variable fertiliser rates within blocks where identified Application rates based on specialist interpretation including individual block yield potential, of the latest industry recommendations Timing nutrient applications with respect to crop stage, irrigation and rainfall Records kept in computer database Banded application of mill mud accounting for crop cycle phosphorous requirement and soil properties <p>Planning and record keeping:</p> <ol style="list-style-type: none"> Identify soil types/productivity zones within each block using GPS yield and soil mapping Develop spatial-based crop cycle Nutrient Management Plan using varieties, yield, soil mapping and specialist interpretation of latest industry recommendations Knowledge of latest nutrient management issues and recommendations Conduct soil tests (and leaf analysis if required) Records kept in electronic data capture Some basic/periodic water quality monitoring Near-infrared (NIR) data used to adjust nutrient rates <p>Machinery:</p> <ol style="list-style-type: none"> Variable rate applicator for granular sub-surface or liquid surface with remote/automatic controlled rate and GPS guidance Banded on-row applicator for mill by-products or other organic ameliorants The majority of nutrients sub-surface applied where practical

Agricultural chemical management practices for cane are summarised in table 4. The term chemical is used in this section as it is a general classification including herbicides, fungicides, rodenticides, and insecticides for which similar

management principles apply.

As cane chemical management progresses to B and A class there is increasing precision in their management.

Table 4 Chemical management practices for cane classified in the ABCD framework

Dated cane chemical management Practices that are superseded or unacceptable	Conventional cane chemical management Farming practices that meet minimum expectations
<p>Description:</p> <ol style="list-style-type: none"> One herbicide strategy for the whole farm based on historic application rates or rules of thumb Often uses maximum label rate residual and knockdown products, irrespective of weed pressure. <p>Planning and record keeping:</p> <ol style="list-style-type: none"> Records kept in head <p>Machinery:</p> <ol style="list-style-type: none"> Standard spray rig, with conventional nozzles 	<p>Description:</p> <ol style="list-style-type: none"> One or two herbicide strategies for the whole farm Uses residual and /or knockdowns at rates appropriate to weed pressure. Calibration of spray equipment to be conducted regularly Meet minimum accreditation and competency requirements for chemical usage Meet legislative requirements for chemical storage, application and disposal <p>Planning and record keeping:</p> <ol style="list-style-type: none"> Develop basic Herbicide Management Plan Keep material safety data sheets (MSDS) Written records kept <p>Machinery:</p> <ol style="list-style-type: none"> Standard spray rig, with a suitable range of nozzles for various application tasks
Best practices cane chemical management BMP currently promoted by the industry	Aspirational cane chemical management Innovative practices that require further validation
<p>Description:</p> <ol style="list-style-type: none"> Implementation of new application technology for improved placement and timing Knockdown herbicides replace residual herbicides where practical (residual herbicides only used where weed species and pressure demands it). Efficient use of pre-emergents to reduce overall chemical application. Timing chemical applications with respect to crop stage, irrigation and rainfall probabilities A focus on good weed control in fallow and plant cane to ensure minimal herbicide in ratoon stages <p>Planning and record keeping:</p> <ol style="list-style-type: none"> Identify – weed types/pressure, soil types and productivity zones for each block Develop herbicide management plan using weed pressure, soil types, crop stage and yield mapping. Formulate best practice pre-emergent management plan using only approved chemicals Change herbicide strategy between blocks where identified Maintain knowledge of latest chemical management issues, recommendations and regulations Monitor weed pressure Meet minimum accreditation and competency requirements for chemical usage Meet legislative requirements for chemical storage, application and disposal Adjust herbicide strategy for next year if required Records kept in Paddock Journal and or electronic data capture <p>Machinery:</p> <ol style="list-style-type: none"> Shielded sprayers, low drift nozzles (matched to job) and high clearance spray equipment with manual rate control 	<p>Description:</p> <ol style="list-style-type: none"> 1–5. Same as B class Targeted herbicide strategies within blocks e.g. weed pressure on row ends; patches of weeds/vines; turning on/off <p>Planning and record keeping:</p> <ol style="list-style-type: none"> Identify – weed types/pressure, pests and diseases, soil types and productivity zones within each block using GPS yield and soil mapping. Weed survey of blocks Develop spatial based Herbicide Management Plan using weed pressure, soil types, crop stage, yield mapping and IWM principles Change herbicide strategies within blocks where identified Maintain knowledge of latest chemical management issues, recommendations and regulations Monitor weed pressure Automated record keeping (e.g. Variable Rate Screen) Adjust herbicide strategy for whole of crop cycle <p>Machinery:</p> <ol style="list-style-type: none"> Shielded sprayers, low drift nozzles (matched to job) and high clearance spray equipment with remote / automatic variable rate control and GPS guidance Automated boom height control, Weed scanner / sensing equipment Multiple tank set ups for chemical injection

The equipment as defined in this table does not have to be owned individually (e.g. can be share-owned, contracted or other).

In March 2008, SYDJV and the FutureCane team identified harvesting as one of two major impediments to the adoption of the ‘improved’ farming system. Harvesting contractors must be able to directly access incentive money to facilitate adoption of technical equipment,

machinery modifications and operating practices which are necessary to enable growers to change practices and extract the full benefits of the ‘improved farming system.’

Harvesting management practices for cane are summarised in table 5. As cane harvesting management progresses to B and A class there is increasing precision in management of harvesting practices.

Table 5 Harvesting management practices for cane classified in the ABCD framework

Dated cane harvesting management Practices that are superseded or unacceptable	Conventional cane harvesting management Farming practices that meet minimum expectations
<p>Description:</p> <ol style="list-style-type: none"> 1. Inefficient farm layout: short rows, narrow and rough headlands common & no ability to harvest through blocks <p>Planning and record keeping:</p> <ol style="list-style-type: none"> 1. Records kept in head 2. Minimal communication between grower and contractor 3. No reference to mill cane quality reports by grower <p>Machinery, capital works actions:</p> <ol style="list-style-type: none"> 1. Standard harvester with no means of adjustment to meet harvesting best practice 	<p>Description:</p> <ol style="list-style-type: none"> 1. Some consideration given to improving efficiency of farm layout for harvesting & harvesting through blocks is practiced <p>Planning and record keeping:</p> <ol style="list-style-type: none"> 1. Some written recording 2. Verbal harvest plan agreement between grower & contractor pre-crushing 3. Some reference to mill cane quality reports by grower <p>Machinery, capital works actions:</p> <ol style="list-style-type: none"> 1. Some improved modifications to harvester
Best practices cane harvesting management BMP currently promoted by the industry	Aspirational cane harvesting management Innovative practices that require further validation
<p>Description:</p> <ol style="list-style-type: none"> 1. Farm layout suitable for efficient harvesting <p>Planning and record keeping:</p> <ol style="list-style-type: none"> 1. Development of harvest management plan between farmer and contractor (includes written contract and price agreement) 2. Records kept in Paddock Journal and/or electronic data capture 3. Access to harvester performance reports at a block level <p>Capital works/landscape actions:</p> <ol style="list-style-type: none"> 1. Installation of GPS tracking devices onto harvesters 2. Harvester front modifications and elevator extensions, to match row spacing 3. Roller train optimisation and correct matching to choppers 4. Accurate consignment of bins to match harvester position 	<p>Description:</p> <ol style="list-style-type: none"> 1. Farm layout optimised for efficient harvesting <p>Planning and record keeping:</p> <ol style="list-style-type: none"> 1. As per B 2. Records kept in electronic data capture 3. Access harvester performance reports and yield maps at a block level and use to make better farm layout and harvesting decisions. <p>Capital works/landscape actions:</p> <ol style="list-style-type: none"> 1. Harvester and haul out utilising GPS guidance equipment plus harvester yield monitor 2. Automatic base cutter height control 3. Roller train optimisation and correct matching to choppers 4. Automatic primary extractor fan speed control linked to harvester pour rate 5. Electronic consignment of bins

The use of equipment as defined in this table can be owned individually, share-owned, or contracted.

Water management practices for cane are summarised in table 6. As cane water management progresses to B and A class there is increasing precision in management of water inputs.

Table 6 Water management practices for cane classified in the ABCD framework

Dated cane water management Practices that are superseded or unacceptable	Conventional cane water management Farming practices that meet minimum expectations
<p>Description:</p> <ol style="list-style-type: none"> 1. No scheduling tools utilized 2. Irrigations based on gut feel 3. Basic drainage considered in original farm layout <p>Irrigation application:</p> <ol style="list-style-type: none"> 1. Application amount unknown 2. No consideration of matching nozzles to pump <p>Planning and record keeping:</p> <ol style="list-style-type: none"> 1. No recording or planning 	<p>Description:</p> <ol style="list-style-type: none"> 1. Visual checks – experience 2. How long it takes to get around 3. Prioritise crop cycle, e.g. plant cane, 1st ratoon over 5th ratoon 4. Water availability 5. Costs – energy (e.g. weekend tariffs) 6. General knowledge of local rainfall history 7. Existing farm layout and infrastructure considers drainage – laser levelling <p>Irrigation application:</p> <ol style="list-style-type: none"> 1. Based on experience 2. Amount often unknown, loosely determined by pump meter reading/time/ha 3. No efficiency checks conducted on equipment 4. May change nozzles to match pump size and pressure 5. Some consideration due to soil type – mainly textural 6. Consideration to land formation and slope 7. Water quality tests conducted <p>Planning and record keeping:</p> <ol style="list-style-type: none"> 1. Records, including water meter readings kept in farm diary 2. Basic understanding of soil moisture characteristics – based on texture rather than scientifically determined PAWC 3. Planning based on verification of meter readings, not measured system outputs 4. Planning based on productivity potential
Best practices cane water management BMP currently promoted by the industry	Aspirational cane water management Innovative practices that require further validation
<p>Description:</p> <ol style="list-style-type: none"> 1. Scheduling tools used manually on main soil type or limiting soil type 2. Weather forecasting models used 3. Irrigation scheduling plan for each crop year 4. Storm water storages / sediment traps 5. Water testing incorporated, mainly for on-farm reuse 6. Irrigation systems match soil and topography <p>Irrigation application:</p> <ol style="list-style-type: none"> 1. System efficiency checks conducted annually 2. Application amount matched to soil plant available water capacity (PAWC), infiltration rate and crop stage 3. Water quality tests conducted regularly when using bores <p>Planning and record keeping:</p> <ol style="list-style-type: none"> 1. Block based water management plan encompassing: soils; scheduling; efficiency – system check; allocation; farm layout and infrastructure; economics 2. Records kept in Paddock Journal and/or electronic data capture 	<p>Description:</p> <ol style="list-style-type: none"> 1. Scheduling tools utilized with some level of automation 2. Scheduling based on block or management units 3. Scheduling based on specific soil types 4. Weather forecasting models used 5. Comprehensive drainage plan considering all farm drainage points 6. Storm water storages / sediment traps 7. Water testing incorporated, mainly for on-farm reuse 8. Use of low pressure overhead and trickle irrigation systems <p>Irrigation application:</p> <ol style="list-style-type: none"> 1. System efficiency checks conducted annually 2. Application amount matched to soil plant available water capacity (PAWC), infiltration rate and crop stage 3. Water quality tests conducted regularly when using bores 4. Software scheduling tools used <p>Planning and record keeping:</p> <ol style="list-style-type: none"> 1. Soil type based water management system encompassing: soils; scheduling; efficiency – system check; allocation; farm layout and infrastructure; economics 2. Records kept in electronic data capture

The use of equipment as defined in this table can be owned individually, share-owned, or contracted.

Workplace Health, Safety and Environmental management practices for cane are summarised in table 7. As cane workplace health, safety and environmental management progresses to B and A class there is increasing precision in management of workplace health, safety and environmental processes.

Table 7 Workplace health and safety management practices for cane classified in the ABCD framework

Dated cane WHS management Practices that are superseded or unacceptable	Conventional cane WHS management Farming practices that meet minimum expectations
Planning and record keeping: <ol style="list-style-type: none"> 1. Little or no training provided 2. No policies 3. Minimal inductions 4. Minimum understanding of WH&S 5. No record keeping 6. Little or no hazard identification and risk management 7. Lack of personal protective equipment (PPE) 	Planning and record keeping: <ol style="list-style-type: none"> 1. Basic understanding of WH&S 2. Conducts mental risk assessments 3. Provides verbal warning and instructions 4. Provides basic inductions 5. No formal records kept 6. Basic PPE 7. Basic emergency procedures
Best practices cane WHS management BMP currently promoted by the industry	Aspirational cane WHS management Innovative practices that require further validation
Planning and record keeping: <ol style="list-style-type: none"> 1. Generic WH&S Policies 2. Written risk management procedures 3. Basic written warnings and policies 4. Provides relevant safe equipment 5. Basic record keeping 6. Basic review of policies and procedures 7. Basic written inductions 8. Feed back 9. Emergency procedures (First Aid) 10. Sign off on induction, etc. by employee/s 	Planning and record keeping: <ol style="list-style-type: none"> 1. Formal Inductions 2. Training in risk management/assessment 3. Hazard Identification 4. Formal policies/procedures 5. Follow up and review of policies and procedures 6. Detailed record keeping 7. Detailed knowledge of WH&S Policies 8. Detailed emergency procedures 9. As for point 10 'B' class

Business/finance management practices for cane are summarised in Table 8. As cane Business/finance management progresses to B and A class there is increasing precision in management of Business/finance processes.

Table 8 Business/financial management practices for cane classified in the ABCD framework

Dated cane business/financial management Practices that are superseded or unacceptable	Conventional cane business/financial management Farming practices that meet minimum expectations
<p>Description:</p> <ol style="list-style-type: none"> 1. Ensure all financial information is provided to an Accountant for compilation 2. No formal Budgets are written 3. No formal Business Plans are written 4. Marketing is left to the Mill and Queensland Sugar Limited (QSL) <p>Financial records:</p> <ol style="list-style-type: none"> 1. Invoices and Receipts kept together 2. Fuel docket kept separately 3. Wages documented 4. Basic financial analysis from Bank Statements 5. Discuss with Bank Manager when necessary <p>Budgets:</p> <ol style="list-style-type: none"> 1. Basic unwritten 2. Basic opportunity analysis 3. Basic GM cost analysis <p>Business plans:</p> <ol style="list-style-type: none"> 1. Basic planning 2. No succession planning 3. No benchmarking <p>Marketing:</p> <ol style="list-style-type: none"> 1. No marketing strategy – left to the mill and/or QSL 	<p>Description:</p> <ol style="list-style-type: none"> 1. BAS completed quarterly on computer system then (maybe) checked by an accountant 2. Budgets and economic analysis completed 3. Skills training identified and hand written paddock journals 4. Awareness of mill pricing system <p>Financial records:</p> <ol style="list-style-type: none"> 1. Recording payments/receipts in a computerised cashbook 2. Books of prime entry 3. Quarterly entry of data (BAS; fuel rebate) 4. Financial analysis completed & discuss with accountant <p>Budgets:</p> <ol style="list-style-type: none"> 1. Annual operational and capital budgets developed 2. Year on year comparison 3. Economic analysis of whole farm gross margin 4. Annual farm budget compared to actuals 5. Basic machinery costs analysed 6. Opportunity cost analysis when necessary <p>Business plans:</p> <ol style="list-style-type: none"> 1. No formal annual strategic plan 2. No succession planning 3. Basic benchmarking - accountant developed using their client base 4. Skills training identified 5. Written paddock journals completed <p>Marketing:</p> <ol style="list-style-type: none"> 1. No formal marketing strategy 2. Aware of mill pricing system, minimal usage
Best practices cane business/financial management BMP currently promoted by the industry	Aspirational cane business/financial management Innovative practices that require further validation
<p>Description:</p> <ol style="list-style-type: none"> 1. BAS completed quarterly on computer system 2. Budgets and cost centre analysis completed monthly 3. Strategic business planning undertaken and computerised 4. Formal marketing strategy <p>Financial records:</p> <ol style="list-style-type: none"> 1. Detailed monthly entries into computerised recording system using basic cost centres (MYOB etc) 2. Monthly reporting and financial analysis 3. Update machinery and other asset values plus liabilities to develop actual statement of position annually 4. As C class 	<p>Description:</p> <ol style="list-style-type: none"> 1. Record changes to asset values annually 2. Detailed ratio analysis 3. Management plans updated regularly 4. Economic analysis of spatial/paddock gross margins 5. Marketing own product <p>Financial records:</p> <ol style="list-style-type: none"> 1. Detailed entry using comprehensive cost centres to assist in depth analysis 2. Monthly computerised entry and reports 3. Development and analysis of changes in statement of position at least annually 4. Financial and performance analysis discussed with competent business advisor/consultant (this maybe your accountant)

Budgets:

1. All budgets computerised living documents personally developed and reviewed monthly
2. Cost centre specific budgeting
4. Detailed machinery costing computerised and analysed at least annually
5. As C class

Business plans:

1. Strategic business plan developed
2. Succession plan written
3. Benchmarking
4. Skills training plan
5. Land and water management plan completed (with water quality information continuously updated)
6. Economic analysis
7. Paddock journals computerised and added into Nutrient; soil and chemical management plans

Marketing:

1. Formal marketing strategy
2. Utilisation of mill (or other) pricing system

Workshops:

1. FEAT workshop
2. Succession planning workshop
3. Land and water management plan workshop
4. Farm productivity improvement plan (FPIP)
5. Business planning workshop

Budgets:

1. Detailed ratio analysis (e.g. use of FEAT or similar tool)
2. Benchmarking/accountants group and proactive farmer group
3. Cost centre analysis
4. Monthly budget comparison to cost centres. Various partial budgets for economic analysis
5. As B class

Business plans:

1. Detailed succession plan regularly updated and implemented
2. Strategic plan and risk analysis updated annually
3. Land & water management plan updated quarterly
4. Skills training regularly for management and staff
5. Economic analysis of spatial/paddock gross margins
6. Sensitivity analysis (risk)
7. As B class

Marketing:

1. Controlling marketing of own product
2. Futures / hedging

Appendix one

Group members:

Regional working group

- o Burn Ashburner (AgriServ)
- o Raylene Hansen (DEEDI)
- o Will Higham (Reef Catchments NRM)
- o Kerry Latter (CANEGROWERS) - Chair
- o John Markley (Mackay Sugar)
- o Ian McBean (Proserpine Sugar Ltd)
- o Michael Porter (CANEGROWERS)
- o Phil Ross (AgriServ)
- o Rob Sluggett (PCPSL)
- o Peter Sutherland (Sugar Services Proserpine)
- o John Tait (CSR)
- o Phil Trendell (Reef Catchments NRM)

Technical working group

- o Burn Ashburner (AgriServ)
- o John Eden (CANEGROWERS)
- o Raylene Hansen (DEEDI)
- o John Markley (Mackay Sugar) - Chair
- o Rob Sluggett (PCPSL)
- o Peter Sutherland (Sugar Services Proserpine)
- o Phillip Trendell (Reef Catchments NRM)

Industry participants

- o Sergio Berardi (Farmer)
- o Chris Blackburn (Farmer/contractor)
- o Lee Blackburn (Farmer/contractor)
- o Kevin Borg (Farmer/contractor)
- o Lawrence Bugeja (Farmer)
- o Tony Bugeja (Farmer)
- o Andrew Cappello (Farmer)
- o Glenn Clark (Farmer)
- o Neil Cliffe (DEEDI)
- o Rob Cocco (Reef Catchments NRM)
- o Tony Crowley (Contractor)
- o Gerry Deguara (Farmer)
- o Steve Dinsdale (Contractor)
- o Frank Frazer (Dept of Industrial Relations)
- o Jon Graftdyk (Reef Catchments NRM)
- o Alan Graham (Canegrowers)

- o Ron Gurnett (Farmer)
- o Andrew Guy (Farmer)
- o Joy Guy (Farmer)
- o Alison Hambleton (NRW)
- o Tony Hinschen (Farmer)
- o John Hughes (DEEDI)
- o Brad Hussey (AgriServ)
- o Tony Jeppesen (Farmer)
- o Lisa Keating (Farmer)
- o Rob Keating (Farmer)
- o Rodney Lamb (Farmer)
- o Richard Lewis (DEEDI)
- o Joe Muscat (Farmer/harvester opr)
- o John Pastega (Farmer)
- o Frank Perna (Farmer)
- o Greg Plath (Farmer)
- o Lou Raiteri (Farmer)
- o Jackie Richters (PCPSL)
- o Phil Ross (AgriServ)
- o Sue Rowlinson (PCPSL)
- o Allan Royal (AgriServ)
- o Barry Salter (AgriServ)
- o John Simpson (Farmer)
- o Wayne Simpson (Farmer)
- o Malcolm Warren (Proserpine Sugar Mill)
- o Warren Watts (Farmer)
- o Eddie Westcott (Farmer)
- o Trevor Wilcox (BSES Ltd)
- o Lindsay Williams (Farmer)
- o Ross Williams (Farmer)
- o Steve Young (Farmer/contractor)

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