

Developing the Vision of the Tully Sugar Industry

SRDC FINAL REPORT-CG002 BY Peter Lucy

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CANEGROWERS



Australian Government
**Sugar Research and
Development Corporation**

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EXECUTIVE SUMMARY

The project was successful in involving the community and industry sectors in a project which addressed the viability of an important industry facing a crisis. Community involvement provided an increased level of understanding of issues, and a recognition that all sectors needed to work closer together on issues, which were within their control.

The use of various tools by the DPI Continuous Improvement and Innovation Team clarified those opportunities within the control of local industry and allowed issues over which there is little control to be put aside.

It was the first time that many of the participants had been exposed to the tools and processes, and because the management team chose to include all who responded, there was insufficient time for follow up mentoring by the DPI Team. This resulted in some of the groups having difficulty in developing an implementation plan for their chosen opportunity based on critical success factors and KPI's.

The project developed 3 groups who met regularly to develop plans for addressing identified industry issues. The industry forum at the end of the project was well attended and saw members of the groups actively participate in the presentations to the forum.

The project fostered a participatory learning approach, where growers and staff of various organizations worked on a solution to a problem. The vision was developed and a number of key opportunities of Value Adding, CCS Optimisation, and Best Practice were worked to various stages of implementation. The project has assisted the local industry to work more closely together in a more structured and logical manner.

BACKGROUND

The Tully Sugar Industry operates in the Wet Tropics of Queensland, and while it has lifted cane production through increased area by 100% in the last 10 years, it faces viability issues associated with a cost price squeeze and lower than state average CCS.

Industry participants saw the value in mill areas, which have developed a shared vision of all industry sectors and the local community. The project sought to develop a vision for the Tully Sugar Industry through the input of all local industry sectors and the community.

OBJECTIVES

The project objectives were to:

- develop a vision and implementation plans for improved profitability and environmental sustainability of cane growing, harvesting, transport and milling in the Tully Region.
- to identify and develop options to address community expectations for sustainable cane growing in the Tully District.

METHODOLOGY

The project sought input from a diverse range of participants involved in cane growing, milling, harvesting, local businesses and community, through an awareness programme and personal invitation.

A local management committee comprising of growers and millers and staff of Tully Sugar Limited and CANEGROWERS Tully District, managed the project and contracted the DPI Continuous Improvement and Innovation Team, to conduct a series of workshops in Tully.

The Management Team and DPI Team, developed suitable promotional material to attract workshop participants, and an awareness programme was run to attract participants. A series of 6 workshops exposed the 90 participants to a series of tools to assist them to identify opportunities to progress the vision, prioritise the opportunities and to clarify the vision.

Three groups involving 35 participants continued to develop implementation plans on three specific opportunities, and these plans were brought back to the local industry at a forum in May 2004.

OUTPUTS

- The workshops developed a vision for the Tully District - "Enhancing the viability of the local Sugar Industry by achieving an average of 5% improvement in profit, innovation and sustainability per sector per year over 5 years."
- 90 industry and community participants were exposed to tools to analyse and prioritise issues within a group environment.
- 14 opportunities to assist the achievement of the Vision were developed. (Attachment A)
- The whole group used active learning tools to prioritise the identified opportunities. An example of a systems map developed is attached. (Attachment B)
- Three groups worked on identified priorities using a systems approach and developed critical success factors, key performance indicators and key practices for three chosen opportunities. (Attachment C)
- Implementation plans for the chosen opportunities were worked on by the groups over a 3 month period.
- A local industry forum was held where the groups presented their findings and plans to the local industry and community.

INTELLECTUAL PROPERTY

There was no intellectual property developed.

EXPECTED OUTCOMES

The expected outcomes were:

- A shared vision of the future of the Tully Sugar Industry hence improved understanding and cooperation between all parties involved in the industry.
- An agreed plan and targets to implement improvement to cane farming, harvesting, transport and milling practices for the Tully region.
- The interaction between the local sugar industry and wider community

IDENTIFIED OUTCOMES

Best Management Practice (17 members):

- Historical top producers in Tully were identified based on tonnes of sugar per hectare and net\$ returns per hectare after harvesting costs and levies

- Detailed survey was developed and reviewed by the Committee and BSES and a plan developed to survey Top Producers to determine Best Management Farm Practices
- The survey was not circulated because of insufficient resources.

CCS Optimisation (10 members)

- Group of growers surveyed to identify reasons for CCS variation within same block, variety and time of harvest
- 32% of responses identified 'harvested too early, harvested too late, wrong variety' as reasons for CCS variations
- Preliminary work done on the development of a harvest management plan to increase CCS

Value Added Committee (8 members)

- Value added evaluation process agreed
- List of potential opportunities for Tully identified and evaluated
- No 'silver bullets' identified

A fourth group has linked with Yvette Everingham's Climate Forecasting project to identify risk management opportunities for the Tully region.

FUTURE RESEARCH NEEDS

The project did not identify any future research needs, however did identify that there were many impediments to implementation of a vision which involved so many participants with varying needs and objectives.

There is an opportunity for further capacity building of industry participants. There is an opportunity for resourcing of grower groups in the Tully area to identify Best Management Practice opportunities. There is an opportunity for utilisation of CSIRO models to develop useful harvest plans in the Tully area to optimise CCS.

RECOMMENDATIONS

The people issues associated with the implementation of the vision across industry and community sectors are critical. The local industry needs to build capacity in the development and implementation of projects within a group environment, and develop tools to manage conflict and competing 'interests'.

The work of the groups, and their understanding of tools which can assist with identifying and implementing opportunities needs to be fostered and encouraged. Leadership within the industry sectors and community needs to be fostered through programmes and mentoring.

PUBLICATIONS

The project produced

- three milestone reports
- documentation on opportunities and implementation plans
- a presentation to the industry forum
- a final report.

ATTACHMENT A

Assessing Opportunities for Impact on:

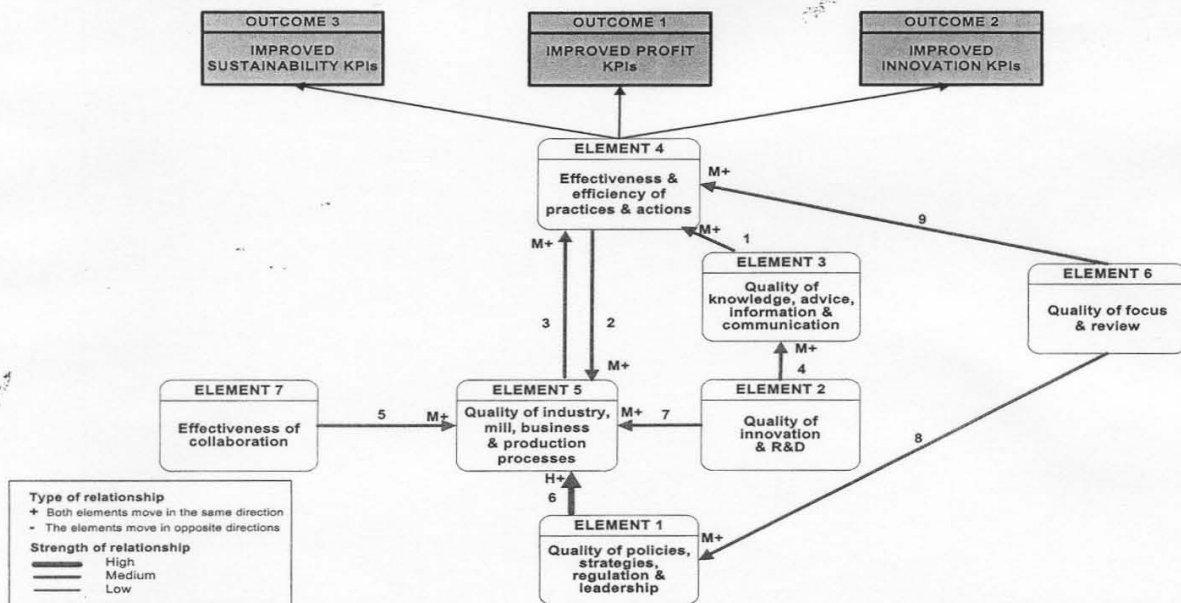
Enhancing the viability of the local sugar industry by achieving an average of 5% improvements in profit, innovation and sustainability per sector per year over 5 years.

Opportunity No.	Impact	Influence
1. Weather climate forecasting risk management opportunities (sophisticated tools to use locally)		
2. Investigate the impact of harvest time on yield and CCS to improve profitability. Investigate ways to achieve optimum CCS by harvesting the right cane at the right time with the aim of growing the pie (bringing more money into the industry from what we've already got)		
3. Benchmarking of top producers – document their procedures and practices – disseminate information and must be done credibly		
4. Whole systems approach to best practice – accurate assessment of financial returns per hectare after growing costs and harvesting costs - communicate to other growers		
5. Determine the impact of current payment arrangements on people's ability to innovate and become sustainable		
6. Innovation – moving composting forward, co-generation (not ethanol production) – can be done relatively soon – making another use of sugar cane plant – give immediate boost to confidence		
7. Identify value adding opportunities to deliver benefits to all sectors and the environment		
8. Integration and training and cooperation across the sectors through the development of leadership skills (amongst other things)		
9. Provide the tools and the training to improve decision making over all sectors – good decisions will take into account impact on all sectors		
10. Specific nutrition application – less inputs and increased income, reduced runoff – specific nutrient for specific variety		
11. To investigate quality parameters (cane quality etc) for growers and harvesters. 13. Monitoring harvesters in district for pour rate and fan speeds etc – gauge the impact on quality of the product.		
12. To reduce dependence of harvesting/transport sector (the whole industry) on fossil fuels and other energy – direct R&D in that direction		
13. A more efficient use of capital – sharing of machinery – enable us to move to new technologies		
14. An industry approach to discussion, management and negotiation on a range of common issues including value adding and reviewing innovation		

ATTACHMENT B

Workshop 4.30 – 8.30, Wednesday 27 August 2003

A system to enhance the viability of the local sugar industry by achieving an average of 5% improvements in profit, innovation and sustainability per sector per year over 5 years



ATTACHMENT C

Optimizing C.C.S.

FOCUS: To investigate and disseminate information on industry best practices for optimizing CCS (through measurement of maturity) by December 2004, for impact on profit.

Outcomes at 21 May 2004 for inclusion in presentation due in June 2004.

☞ Historical Data Analysis

- Purity Levels derived from Cane Quality Scheme:
 - <83% purity (discount quality)
 - 83-87% purity (standard quality)
 - >87% purity (premium quality)
- 14% of 2003 season cane supply <83% purity (discount quality)
- 63% of 2003 season cane supply <87% purity (less than premium quality)
- Benefit to industry of processing cane of increased maturity above discount (<83% purity) is demonstrated below with comparison of return to grower from cane harvested at 11.13 ccs and 83.33% purity and cane which has matured with a 1 unit increase in pol in juice, a 1 unit decrease in insoluble solids, and a 1 unit increase in fibre resulting in cane of 12.78 ccs and 96.43% purity and an additional \$3.72/tonne of cane to the grower. Benefits will also flow to the processor.

pol in first expressed juice	12.50	13.00	13.50	+1.00
brix in first expressed juice	15.00	14.50	14.00	-1.00
fibre in cane	14.50	15.00	15.50	+1.00
pol in cane	10.06	10.40	10.73	
brix in cane	12.38	11.89	11.41	
ccs	11.13	11.96	12.78	+1.65
purity of first expressed juice	83.33	89.66	96.43	+13.10
\$/t cane @ \$250/t sugar	\$16.61	\$18.48	\$20.33	+\$3.72

- Grower Survey on Reasons for harvesting of low purity cane (<83% and <87%) returned the following:
 - 23% harvested too early/too late – had to harvest cane to specified rotation.
 - 17% cause unknown – *it is recognized that purity can also be affected by other factors such as extraneous matter content, cut-to-crush delay, etc. and these factors may have contributed but the purpose of this analysis was to determine at the first decision point – harvest planning – what factors caused low purity cane to be processed.*
 - 14% ploughout/replant
 - 14% wet harvest
 - 10% wrong variety for soil type
 - 8% pest and disease infestation
 - 6% lodged cane

- 6% very old ratoons
- 2% season too dry

☞ Identification of Industry Practices

- Local general interest in obtaining knowledge of factors influencing CCS and purity was determined from farmers forums and reported back by those who attended.
- Information on factors influencing CCS and purity, and methods of determining cane maturity, and use of computer models as tools to assist growers in determining optimum harvest schedule has been located from a number of sources, (e.g. BSES Laboratory Manual, WA Dept of Ag Farmnote No 23/2002, Internet search of other sugar growing countries documented methods) and is available to disseminate to growers.
- Information dissemination can be achieved by utilizing local resources, e.g. BSES, and Cane Tester, and present at either Farmers Forums or Workshop.
- Training information may need to be developed into a package for delivery, if not already available.
- Need to source competent and practical computer programmer/operator and willing grower(s) to develop local harvest planning scheduler.

☞ Difficulties identified

- Lack of time available by members to competently follow through on actions. (Reward for effort is higher from other activities.)
- Unsure if information packages currently available will fully cover the topics required to be disseminated.

Utilization of trainers, computer programmers, and growers who provide input to decision making for modeling require funding.

☞ Positive outcomes

- Information on factors influencing CCS and purity, methods for determination of cane maturity, and basis for modeling of harvest optimization is already available in industry.

The Critical Success Factors Tool

Focus:

To achieve continuous best practice and best returns/ha in individual districts (in the growing, harvesting and transport sectors) by

- 25% of the mill production area by December 2004
- 70% of the mill production area by December 2008

through systems design and analysis* and effective communication and participation

* Ensuring best pay-off for inputs across the whole district system

Targeted Outcomes	Ta
1. Involvement of target participants	Documented list of
2. Identified indicators of returns/ha	Documented list of
3. Systems design and analysis of best practices for returns/ha	
4. Agreed, documented and communicated best practices for the region	
5. Best practices and returns achieved in 70% of the production area by December 2008	
6. Best practices and returns achieved in 25% of the production area by December 2004	

Principles:

- Partnership
- Best practice
- Systems design and analysis
- Continuous improvement
- Benchmarking
- Communication
- Performance measurement
- Environmental sustainability

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through systems design and analysis* and effective communication and participation

Critical Success Factors	Key Performance Indicators	
1. Leadership, action teams, a process and a program	<ul style="list-style-type: none"> • Individuals identified by end 2003 • Process, program and timetable endorsed by March 2004 	<ul style="list-style-type: none"> • Identify the leaders • Identify the teams • Identify scope, scale, sectors • Design a process, • Communicate to s • Provide the resour
2. Clearly targeted participants involved	<ul style="list-style-type: none"> • Targeted participants involved by December 2003 	<ul style="list-style-type: none"> • Clear criteria for in • enthusiasm, best p • Promotional activit • Document that sta • Ensure confidence • confidentiality)
3. Resources	<ul style="list-style-type: none"> • By December 2003 necessary human and financial resources scoped and plan to secure them and signed off by industry organisations 	<ul style="list-style-type: none"> • Negotiate roles for • resources • Identify potential in • Prepare document • Get sign-off of indu
4. Usable performance indicators and information	<ul style="list-style-type: none"> • Relevant performance indicators identified and negotiated with participants and specialists by March 2004 • Data taken and measured against indicators 	<ul style="list-style-type: none"> • Look at current da • Access available in • Ensure that the da • outcomes easily
5. District systems analysis of best practice, returns (gross and net) and benchmarking	<ul style="list-style-type: none"> • Each district (sector) has clear priority options for best returns • Individuals have ability to easily evaluate the economic impact of different practices • Sign-off/endorsement of best practices by local organisations 	<ul style="list-style-type: none"> • Test available data • Source data curren • Ensure information • Benchmark regula • and sectors • Develop user-frien • to identify practice
6. Regular (6 monthly) reviews	<ul style="list-style-type: none"> • Level of participation in six monthly reviews • Level of on-going participation in the project 	<ul style="list-style-type: none"> • Ensure the review • the participants an • Have clear perform • Ensure the particip • Produce reports, d • Involve investors a

The Critical Success Factors Tool

Focus:

To scope, identify and achieve at least 1 value-adding opportunity or innovation per year that benefits the industry & the environment by implementing an effective industry innovation process

Targeted Outcomes	
7. Industry innovation process designed and implemented	• Documented
8. Value adding opportunities identified and implemented	• List of value
9. Innovations created, implemented and managed	•
10. Benefits to the industry identified and measured	•
11. Benefit to the environment identified and measured	•

Principles:

- Value adding
- Innovation
- Creativity
- Partnership/contracts
- Markets
- Diversification
- Community engagement
- Regional development
- Environmental impact
- Communication
- Regional innovation systems

Focus: To scope, identify and achieve at least 1 value-adding opportunity or innovation per year that benefits the industry & the environment by implementing an effective industry innovation process

Critical Success Factors	Key Performance Indicators	
7. An effective industry innovation and value-adding process designed	<ul style="list-style-type: none"> • An agreed process for achieving industry value-adding and innovation documented by March 2004 	<ul style="list-style-type: none"> • Ide in t • Inv cas • De ow • Re
8. Key people involved	<ul style="list-style-type: none"> • Necessary people required for successful industry value-adding and innovation identified and encouraged to be involved by December 2003 	<ul style="list-style-type: none"> • Ide • Ide inv • En hav • En eg
9. Resources	<ul style="list-style-type: none"> • The necessary resources identified by May 2004 	<ul style="list-style-type: none"> • Ide • Pre • Pre
10. Identification of ideas, information and partnerships	<ul style="list-style-type: none"> • Good ideas, information and potential partners identified by June 2004 	<ul style="list-style-type: none"> • De pot • Re • Ne • De • Ide
11. Good market, technical, commercial and feasibility analysis	<ul style="list-style-type: none"> • Rate of return and timeframe required to achieve profit/ sustainability/benefit by June 2004 per idea 	<ul style="list-style-type: none"> • Inv • Est • Est • Ca •
12. Effective industry involvement, communication and adoption process	<ul style="list-style-type: none"> • Meetings, communication and adoption processes implemented every 90 days 	<ul style="list-style-type: none"> • Ide dis • Dis wid • De • Re cor

The Critical Success Factors Tool

Focus:

To investigate, agree on, and disseminate information on industry best practices for optimising CCS (through measurement of maturity) by December 2004, for impact on profit

Targeted Outcomes	
12. Industry best practices identified	• Document
13. Information on lost opportunity cost of current practices	
14. Information on available resources (eg harvesters, maturity testing)	
15. Recommendations for changed practices in industry	
16. Maximum use of available resources	
17. Confidence to recommend identified best practices to industry	

Principles:

- Good information packaging and communication
- Research and development
- Decision support tools
- Independence
- Maximising industry return
- Effective presentation
- Education and training

Focus: To investigate and disseminate information on industry best practices for optimising CCS (through measurement of maturity) by December 2004, for impact on profit

Critical Success Factors	Key Performance Indicators	
13. Data analysis based on relevant cost/benefit criteria	<ul style="list-style-type: none"> • Data analysed for impact on profit by June 2004 	<ul style="list-style-type: none"> • Determinin • Gather ne • Analyse o • Determin
14. Assessment of resource ownership, constraints and practicalities	<ul style="list-style-type: none"> • Assessment of resource ownership constraints and practicalities by June 2004 • Recommendations for changes for cost effective improvements to current practices 	<ul style="list-style-type: none"> • Identify a • Measure • Draw up • resources • Modify C. • Assess th • and prod • Report on
15. Interested industry participants	<ul style="list-style-type: none"> • 60% of growers and harvesters respond to surveys and use information by December 2004 	<ul style="list-style-type: none"> • Actively in • and disse • Develop n • informati • Promote • Show val • (bottom-li
16. Good information communication and dissemination	<ul style="list-style-type: none"> • Acceptance of recommendations by greater than 50% of farmers by December 2004 	<ul style="list-style-type: none"> • Report on • and indus • Report on • achieved • Use farm • Use indiv
17. Effective education and training	<ul style="list-style-type: none"> • High scores from participants on the effectiveness of education and training 	<ul style="list-style-type: none"> • Develop • Develop • Acquire s • Use tools • Acquire a • participar
18. Independent leadership	<ul style="list-style-type: none"> • Credible and independent leaders in place by December 2003 • High scores for credibility and independence of leadership in the project 	<ul style="list-style-type: none"> • Develop • Identify p • Appoint s
19. Resources	<ul style="list-style-type: none"> • Necessary resources scoped and identified by December 2003 	<ul style="list-style-type: none"> • Identify n • Identify a • Develop