AUSTRALIAN BANANA INDUSTRY

INDUSTRY DEVELOPMENT NEEDS ASSESSMENT

June 2009

Contents

ABGC	Australian Banana Growers' Council
CIE	Centre for International Economics
DAFF	Commonwealth department of Agriculture, Fisheries and Forestry
HAL	Horticulture Australia Limited
IAC	Industry Advisory Committee
IDNA	Industry Development Needs Assessment
NSW DPI	NSW Department of Primary Industries
QDPIF	Qld Department of Primary Industries & Fiseries
TSSD	Taking Stock and Setting Directions project

Executive summary

The Australian Banana Industry has reached a pivotal point in its development and is confronted with enormous challenges and many opportunities. While this Industry Development Needs Assessment (IDNA) report has been generated as a requirement of Horticulture Australia Ltd (HAL) for all horticultural industries to review their industry development needs, it has been exceptionally timely given its alignment to the Banana Industry's new levy arrangements and new Strategic Plan.

The Australian Banana Industry Strategic Plan (2009-2014) represents a significant cultural shift for the industry. In particular, the plan places greater emphasis on satisfying a growing customer base while ensuring that the integrity of Australian bananas and banana production systems are maintained. It also seeks to enhance collaboration across the value chain.

As with most horticultural and other agricultural industries, the capacity of the industry to do all it needs or would like to do is limited by human and financial resources. Growers are aging, profitability is tightening and more demands are being made to satisfy both internal industry and external community expectations. This means having to make smarter decisions about resource allocation and about how to manage the business of research, development and extension. Most critically, it also means making smart strategic investments in the industry's future capacity.

For this reason, the work undertaken as part of this IDNA process has lead to the need for establishing and aligning a range of industry development activities to the objectives and strategies of the Strategic Plan. These activities seek to integrate what would have previously been loose collections of individual projects. Such integration is aimed to ensure that related projects add value to one-another, that extension and communication activities are applied across projects thereby providing information in a systems context, and that the value from limited human and financial resources is maximised by reducing duplication of effort often arising from an individual project focus.

Five strategic areas of industry development activity are envisaged to effectively implement the Australian Banana Industry Strategic Plan 2009-2014:

1. Grower development through smart extension
2. Value chain development through relationship building and collaborative and participatory research
3. Informed decision making through targeted communication
4. Securing the future through scholarships and professional

development; and

5. Diversified regional development to strengthen continuity of supply.

These five portfolios of activities are described in this report under Section 5.

Recommendations:

This report recommends that:

1. A coordinated approach to extension should be adopted that ties extension strategies around related areas of knowledge (i.e. across projects) and embraces a process of continuous learning (comparative benchmarking). The Australian Banana Industry should consider appointing a national extension coordinator (or an extension team) to support the extension efforts of the three main growing regions through a coordinated National Australian Banana Industry Extension Strategy.

2. Foundation projects should be supported to i) compare the Australian banana industry's performance to other banana producing nations so as to establish a benchmark of performance, and ii) identify benchmarks of best practice along the supply chain that may act as the basis for an ongoing comparative benchmarking process. A feasibility study of establishing such a process should be embedded into the project aims of the second project. The concept of a benchmarking process should be abandoned should it not be considered feasible during the life of the new strategic plan.

3. A coordinated approach to value chain engagement should be adopted. The Australian Banana Industry should appoint a part time coordinator to develop and implement a value chain extension strategy, facilitate value chain relationship building, oversee the range of value chain projects highlighted in the strategic plan, and organise regular forums for value chain interaction. The cost of the coordinator can be attributed to individual project budgets in an aggregated value chain portfolio of activity.

4. A comprehensive communication plan should be prepared for the Australian Banana Industry as a matter of urgency to support the implementation of activities outlined in the strategic plan and to enhance the two way engagement of industry stakeholders in industry issues, and better inform decision-making across industry sectors. The plan should segment industry target audiences and align key messages and communication products most appropriate to each.

Following preparation of the plan, the ABGC should be supported to coordinate the implementation of the plan. No less than 10% of the industry's R&D budget should be dedicated to communication annually.

5. The industry should establish a research scholarship scheme to attract students to study issues of importance to the industry both now and likely to remain so into the future. A minimum of two scholarships should be supported in any one year at either the Masters or Doctoral level. Students should also be engaged in industry activities at minimal to no cost to broaden their professional development and their learning context.

6. The industry should support governance training for members appointed to industry representative positions. Other forms of professional development should be considered for these representatives and other industry members, including succession training and study tours (being careful not to duplicate activities supported through the national extension strategy.

7. The industry should explore the potential to diversify the regions within which bananas are produced so as to strengthen the industry's resilience to the range of natural hazards that confront it. The criteria for selecting new regions should include capacity issues including access to skills and labour, in addition to other factors such as land suitability, resource access and infrastructure capacity.

1. Industry Development Needs Assessment for the Australian Banana Industry

Background

Horticulture Australia Limited is encouraging industries such as the banana industry to take a much more holistic view of industry development than has been undertaken in the past. HAL defines industry development as:

> *The process of informing and empowering those in horticulture to make better business decisions. It is characterised by services that:*
>
> - *empower those involved in horticulture to make better business decisions*
> - *benefit growers from informed business decisions across the supply chain, including retail, wholesale service, supplier and logistics businesses*
> - *develop industry capacity through people and institutions.*

A plain English interpretation of this definition suggests that horticultural industries, including the banana industry, need to improve the professionalism, business skills and value chain relationships of growers. Both individuals and organisations have a role to play in this process of professionalisation. Growers need to be active information seekers, and organisations need to be active facilitators of information and knowledge exchange.

Preferred approach

The Industry Development Needs Assessment (IDNA) process advocated by HAL builds on groundwork by Jeff Coutts and Kate Roberts in 2004 for the Cooperative Venture on Capacity Building initiative, jointly supported by HAL and a range of other R&D Corporations. The process is largely based around extension, although there is acknowledgement of the importance of wider communication, marketing and strategic planning capacity in industry development.

With respect to extension, all horticultural industries are encouraged to adapt a holistic approach based on the assumption that not all growers learn the same way or at the same rate. Indeed, studies of Australian extension prove that growers have markedly different preferences when it comes to seeking and exchanging knowledge and experience. Good extension therefore must cater for this diversity. On this basis, HAL seeks to ensure that five complementary approaches (models) to extension are taken into account in developing industry-wide extension initiatives. These models include:

- Group facilitation/empowerment model, focusing around individuals and groups taking responsibility for their own development;
- Technological development model, focusing around individuals developing their own technologies, practices or systems, usually working in groups;
- Programmed learning model, focusing on specifically designed training programs;
- Information access model, focusing around a range of communication products and mechanisms; and
- Personalised consultant model, focusing around mentoring and personal advice from consultants perceived champions.

Contributors

Preparation of this IDNA report was overseen by a sub-committee of the Industry Advisory Committee, and included:

- Nicky Singh - ABGC President, Banana Grower Coffs Harbour
- Tony Heidrich – CEO ABGC
- John Tyas - HAL Industry Services Manager
- Cameron MacKay – ABGC Vice-President, Banana Grower Tully
- Marc Darveniza – Banana Grower Innisfail
- Gary Fattore – Chiquita Foods

Different elements of the IDNA process were undertaken as part of other industry initiatives, including the Taking Stock and Setting Directions (TSSD) for the Australian Banana Industry project and the Australian Banana Industry Strategic Plan project. The TSSD project results have contributed largely to sections 2 and 4 of the IDNA (see below). Membership of an industry advisory group overseeing the TSSD project comprised:

- Nicky Singh - ABGC Chair, Banana Grower Coffs Harbour
- Patrick Leahy - former ABGC Chair, Banana Grower Tully
- Mark Nucifora – Innisfail Local Producer Association Chair & Banana Grower
- Kurt Lindsay – Banana Grower Caboolture
- Tim Hyde – Banana Grower Carnarvon
- Andrew Everest – Banana Grower Northern NSW
- John Tyas – HAL Industry Services Manager, Brisbane
- Mark Hickey and John Williams – NSW DPI
- Bob Williams – Science Leader Horticulture & Forestry DPI&F (Qld)
- Tony Heidrich – CEO ABGC
- Jann Bonsall – Office Manager ABGC
- Robert Stafford, Dane Roberts and Cameron Hook – DAFF

The authors of this report acknowledge the depth of expertise brought to the project by these people and have endeavoured to do justice to their invaluable input.

Timetable

The timetable for the IDNA largely coincided with the development process for the 2009-2014 strategic plan of the Australian Banana Industry, covering October 2008 to March 2009. It would, however, be remiss not to recognise the contribution industry members made to issue identification during the TSSD process (September 2007 to June 2008). A combined timetable thus appears:

Table One: Project timeline

Step	Taking Stock & Setting Directions													Strategic Plan/IDNA							
	2007				2008												2009				
IDNA step	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
C'tee establishment (TSSD)																					
C'tee establishment (Strategic plan)																					
Characterising the industry																					
Extension option assessment																					
Assessing current practice																					
Identifying future needs																					
Prioritising actions to address																					
Developing delivery options																					
Development of imple-mentation plan																					

2. Key characteristics of the Australian Banana Industry

The following information is based on the Banana Industry Taking Stock and Setting Directions report (TSSD) published in June 2008 and the economic analyses undertaken as part of the Strategic Planning project. The TSSD project involved a comprehensive consultation process to determine the characteristics and needs for the industry.

Customer, markets and products

Products marketed

Bananas are a year round fruit that is predominantly consumed as fresh product with Cavendish bananas accounting for approximately 95% of the market. The remaining 5% is represented by Lady Finger bananas and other cultivars such as Goldfinger, Ducasse, FHIA 18, Red Dacca, Sucrier and Plantain, etc. The latter cultivars together represent less than 1% of the total market.

The TSSD project reports that although Australian consumption is relatively high by world standards, some in the industry suggest that if the industry does not respond better to consumers' need for an expanded range of products, a gap or an opportunity in the market may be filled by imports. Little branding and product differentiation is undertaken and there is scope for more banana varieties and greater promotion of production systems. Current examples of product differentiation include 'ecoganics' (red tips), lunch box bananas, organic and biodynamic, with the potential to explore functional bananas that have supplementary nutritional attributes.

Consumers (domestic and export)

The recent study conducted by Bread and Butter Research (2008) indicated Australian consumers will usually consume bananas on their own as a snack during the day, however their use as an ingredient, particularly for breakfast, was also significant. Although generally bananas are considered to be healthy, convenient and high in energy, this was not the main driver for purchasing bananas. When asked why consumers bought bananas, the major reason given was 'out of habit' followed by 'price'. Table Two shows that if the retail price of bananas increased by 1 per cent, quantities purchased would fall by 1.2 per cent. This supports price as a key factor in consumer purchases (see also the sub-section on 'Competitors'). Other than price, the main barriers for purchasing bananas appeared to be appearance and ripening/storage issues (many survey respondents found that bananas tended to go off before they were eaten).

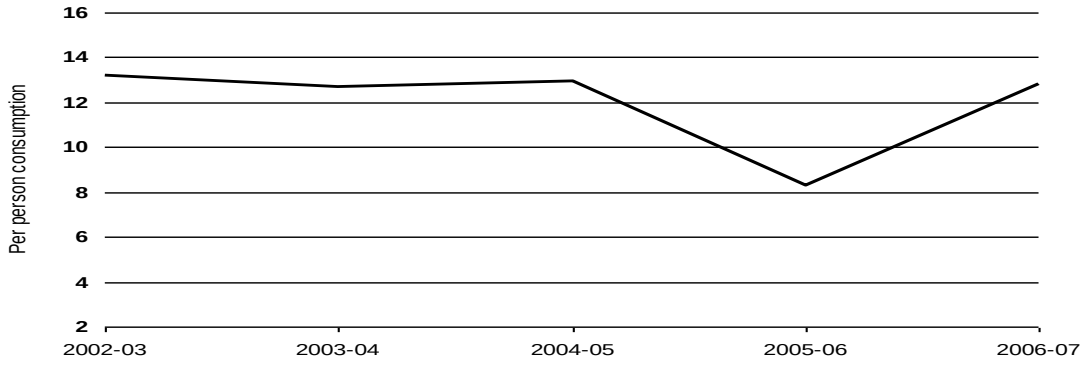
Table Two: Demand elasticities for fruits, monthly data

Commodity	Uncompensated price elasticity								
	Apples	Citrus	Summer fruits	Avocado	Banana	Strawberry	Grapes	Other fruit	Expenditure
Apples	-0.78	0.08	0.12	-0.02	0.07	0.13	0.12	-0.06	0.96
Citrus	0.13	-1.41	-0.2.0	-0.00	0.01	0.24	-0.15	0.41	0.91
Summer fruits	0.27	-0.29	-1.15	0.05	0.16	-0.14	-0.06	0.21	0.96
Avocado	-0.08	-0.01	0.06	-0.82	0.04	-0.06	0.04	0.05	1.01
Banana	0.08	-0.00	0.06	0.01	-1.22	0.01	0.07	0.04	1.09
Strawberry	0.29	0.38	-0.15	-0.06	0.01	-2.26	-0.04	-0.23	1.20
Grapes	0.18	-0.16	-0.05	0.02	0.12	-0.02	-0.72	-0.12	1.08
Other fruits	-0.06	0.20	0.07	0.01	0.03	-0.07	-0.07	-0.36	1.09

Note: Own-price elasticities are highlighted/
Source: CIE 2008 for FutureFocus.

Figure One demonstrates that banana consumption is high by international standards at around 13 - 15kg per person per year but growth is only in line with population changes. By comparison with other developed countries, Australians are already significant consumers of bananas on a per person basis (higher than the United States, Germany and the United Kingdom and significantly higher for countries such as France). However, consumption is lower than New Zealand (a non banana producing country) which averaged 18.6 kilograms per person between 1999 and 2003. This suggests it is reasonable to aim for an increase in consumption in Australia by at least 15% in the next 5 years.

Figure One: Australian per person banana consumption



Source: Hi_link database

Consumer research by Roy Morgan Research (2007) shows that:

- Only 3% of the Australian population claimed never to have bought or eaten bananas;
- Older consumers are more likely to purchase and consume bananas than their younger counterparts;
- Children's consumption levels are not as high as thought;
- Consumption levels are slightly higher in regional areas;
- Banana consumption levels are highest in Qld and lowest in Victoria;

- Bananas are a consumer staple - 88% of shoppers purchased bananas with their main grocery shop the month preceding the survey; and
- Female grocery buyers with children aged 5 -12 are the main purchasers of bananas. People aged over 50 were identified as significant consumption group, while those aged between 18 and 35 were identified as under consumers of bananas.

Markets (domestic and export)

The Australian banana industry relies on the domestic fresh fruit market for more than 95% of its sales. Exports are almost non-existent. Australian bananas cannot compete on price with low labour cost high quality suppliers of commodity fruit. Niche opportunities do however need to be considered as part of the 'mix' for an industry facing possible future import competition.

The supermarkets are by far the largest market segment with the two dominant Australian supermarket chains marketing an estimated 60% of Australian bananas. This proportion is falling however, as independent fruit retailers and second tier supermarkets expand their share of sales.

Direct to supermarket supply is a growing trend. 30% of production is reported to be direct supply and a further 30% of production is sourced by supermarkets through the wholesale markets.

Marketing and market development (domestic and export)

The current strategic plan and the *Hi_link* analysis by the CIE indicate a strong need to increase demand by at least 15% to justify foreseeable industry investment in marketing and R&D, and for growers to remain viable. Bananas compete well in the market place, and focussed promotion of bananas in 2008 through 'Make Those Bodies Sing', building on earlier promotion activities and results, is seen as a positive initiative. However, some in the industry suggest that if the industry does not respond to consumers' need for an expanded range of banana products, this may create a gap or an opportunity in the market which may be filled by imports should they be allowed into Australia in the future. As the promotion levy has only just come into place in 2008-09, all promotion has been non-levy promotion do date.

Competitors and the nature of competition

Competitors (domestic and export)

Currently there are no imported bananas in Australia and the competition mainly comes from other fruits and snacks.

From the perspective of price (Table Three), bananas compare favourably with their fresh food competitors. This is reflected in

supermarket sales figures (Table Four).

Table Three: Retail Price of Competing Fresh Fruit (average $/kg)

Type	Indicative Price During Summer ($/kg)	Indicative Price During July-Sept ($/kg)
Bananas	1.50 to 3.00	3.00 to 8.00
Table grapes	2.00 to 4.00	3.50 to 14.00 (mostly US)
Mangoes	3.00 to 5.00 each	3.50 to 4.00 each (Mexico)
Summerfruit	4.00 to 7.00	NA
Lychees	8.00 to 10.00	NA
Apples	3.00 to 7.00	3.00 to 6.00
Mandarins		1.70 to 6.00

NB: Data supplied from various industry sources.

Table Four: Supermarket expenditure shares 2002-03 to 2006-07

Product	*Retail expenditure shares (%)*
Bananas	19.9
Apples and pears	20.8
Citrus	10.8
Grapes	10.6
Stonefruit	9.8
Berries and kiwifruit	10.4
Other fruit	17.6

Source: CIE 2008 for FutureFocus.

In comparison with other fruits bananas tend to have low cross-price relationships with other fruit categories. Of these categories, apples, grapes and summer-fruits are the most significant competitors on relative price. It is possible that bananas also compete with other snack foods outside of the fruits group.

Ease of entry to the industry

Generally entry costs are low and surplus production capacity 'keeps a lid' on industry profitability. Inadequately resourced producers may generate lower quality fruit. As one respondent during the TSSD consultations suggests: "Y*ou need to be a gambler to be a banana grower - price fluctuations and volatility keep me in business and reduce easy entry into the industry*".

Sources of competitive advantage

In the past the Australian banana industry's main advantage came from Australia's priority on safeguarding those industries highly vulnerable to pests and diseases which could have deleterious impact on plant and animal integrity. The industry has so far not undertaken a comprehensive analysis of its future competitive advantages, although has identified this as a high priority in its new strategic plan.

Operating systems

Marketing systems and structures

While approximately 55% of all fruit and vegetables are sold through the two major supermarket chains as much as 60% of all bananas may be sold through these two chains. Table Five gives an indication of the dollar value of the industry at various levels of the supply chain. Values are cumulative.

Table Five: Supply Chain Value (Cumulative)

Supply Chain Sector	Low Value (AU$million)	High Value (AU$million)
Farm Gate	245	295
Wholesale	300	350
Distribution Centre	360	420
Retail	540	630

Source: ABGC website (2007).

Using the 2003 market throughput figure of 275,945 tonnes (21,226,551 13-kilogram cartons) as an example, an industry Farm Gate value of AU$295 million (estimated high end) would represent an average return to growers of about AU$13.90 per carton which in turn represents an average retail price of about AU$2.28 per kilogram.

A representation of the banana industry supply chain is shown in Figure Two.

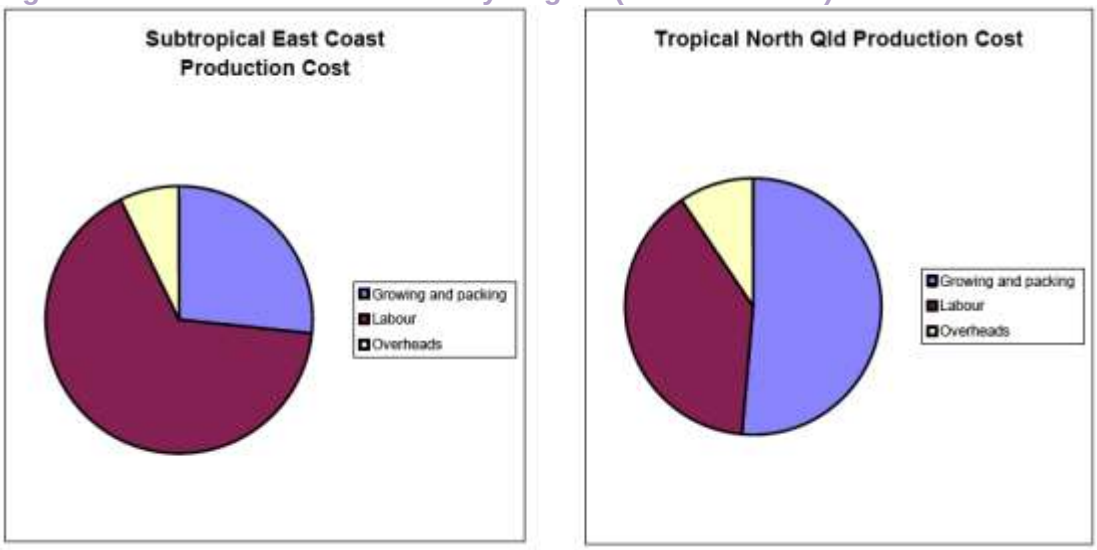
Figure Two: Representative Banana Industry Supply Chain.

Source: ABGC web site (www.abgc.org.au accessed 19 September 2007)
NB: Banana ripening can occur at either wholesaler/wholesale markets stage or at the supermarket distribution centre stage of the supply chain. Packhouses are either on-farm or cooperative/category manager based.

The cost of production varies significantly between banana growing regions (see Figure Three next page). The viability of the Subtropical East Coast region is heavily dependent upon its capacity to deliver bananas during production shortfalls in the north, often due to cyclonic events, when prices tend to be high.

Opportunities may be available for reducing input costs through further mechanisation, diversification and through chain collaboration, especially in relation to transport.

Figure Three: Cost of Production by Region (% of total cost)



Source: AgEconPlus analysis of RCS 1999 data
NB: 'labour cost' includes an imputed cost for non-paid family labour

Production systems and processes

Production information is currently limited and although Australia is thought to be 'on par' with the rest of the world in the use of technology given our high unit labour costs, no systematic analysis (benchmarking) especially of comparable post-harvest systems has been completed. Generally, growers see limited value in benchmarking, although WA has a benchmarking system being put into place. Outside observers believe international benchmarking, including import parity price analysis, is essential if the industry is to compete in the long-term. The new strategic plan intends to address this gap.

Despite the fact that the tropical north Queensland industry is better suited to the adoption of new technology (climate, topography, scale of production, etc), mechanisation innovation has generally been modest. Mechanisation is increasingly a priority for this industry. Mechanisation is starting to be looked at especially in crate management and is being driven by OH&S rather than labour supply.

Leading growers contacted during the TSSD consultation (both tropical north Qld and subtropical east coast) are seeking R&D support for field mechanisation (eg design of mechanical harvesters to reduce bunch damage), working on the assumption that up to 10% of damage from bunch cutting to carton is labour related and that a mechanical harvester might reduce this to 2%. Automation is being introduced for irrigation management, particularly for fertigation and more efficient application systems.

Covered (protected environment) production is under consideration by some growers and researchers. Covered production could lift yields, speed ripening, minimise wind damage/rub, lower water

consumption, reduce product variability and minimise seasonal risks. Covered production would add significantly to cost of production. Overseas experience (eg Israel and Canary Islands) with covered production is also being explored. The research station at Carnarvon WA has a small-scale trial. R&D aimed at concept feasibility may be appropriate for the Australian situation. Interest in financially supporting R&D for protected environment production has been expressed from the largest banana growing enterprise in Australia.

Industry organisation and performance

Location and extent of production

Bananas are grown in three Australian states and the Northern Territory (see Figure Four) and the industry can be stratified into three distinct production regions:

- Wet Tropics of Tropical Far North Queensland (FNQ);
- Bundaberg and Sunshine Coast of South East Queensland and Far North Coast and Mid North Coast of Subtropical East Coast; and
- Western Australia Carnarvon and Kununurra and the region south of Darwin Northern Territory.

Figure Four: Australian banana growing regions

Source: HAL Horticulture Statistics Handbook 2003

Table Six outlines the industry's production profile from an

enterprise and production area perspective. 90% of national production originates from tropical far north Queensland (237,000 tonnes), and is heavily concentrated between Babinda and Cardwell (Tully and Innisfail regions). This is mainly due to the favourable climatic and geographic conditions for large scale year round production.

7% of total Australian production is located between Bundaberg Qld and Coffs Harbour/Macksville in NSW. The production area has decreased significantly in the last decade mainly due to the variable profitability of the area. However, it has remained viable due to adverse weather conditions in far north Queensland in 2006.

3% of total production is grown around Carnarvon (WA) which has a total of 43 farms with an average size of 4 hectares. Yields are 20 to 26 tonnes/ha with coordinated promotion through the 'Sweeter Banana Cooperative'. The Northern Territory banana industry (4 farms with an average size of 50 hectares) has almost become non-existent after an outbreak of tropical race 4 Panama disease. Both the tropical NT and WA industries face an uncertain future.

Table Six: Enterprise Numbers and Production Area Overview

Region	Contribution to Total Production (%)	Enterprise Numbers (No.)	Average Enterprise Size (ha)	Yield (t/ha)	Trends
Tropical North Qld	90+	248	18	30-40	• Fewer larger farms • Profitable
Subtropical East Coast	7	477	4	20-26	• Contraction in farm numbers • Struggle to be profitable
WA and NT	3	57			• Carnarvon most viable

Source: Industry consultation (TSSD 2008)

In 2007 Australia's 800 banana growers were estimated to have produced over 12.09 million 13-kilogram cartons of bananas (Table Seven).

Table Seven: Australian Banana Market Throughputs (tonnes) by State of Origin, 2000-2007

Year	QLD	NSW	NT	WA	Total
2000	179,493	29,788	4,105	7,741	221,126
2001	206,869	21,358	3,575	8,606	240,409
2002	207,429	17,212	893	7,213	232,747
2003	256,016	31,213	931	5,786	275,945
2004	236,883	10,031	856	5,819	253,588
2005	253,048	7,858	132	3,545	264,583
2006	88,852	11,352	203	4,647	105,054
2007	256,668	12,574	209	4,689	274,140

Note: Totals may not add due to rounding.
Sources: TSSD 2008

During the period 1993 to 2007 volumes of Australian bananas

through the central markets fluctuated from 234,703 tonnes in 1993 to a low of 206,343 tonnes in 1999 and a record 275,945 tonnes in 2003. Over this thirteen-year period volumes of Queensland fruit generally increased while volumes of New South Wales fruit generally declined. A notable exception was in 2006 due to the Cyclone Larry devastation of the North Queensland banana industry.

The Australian banana industry is a mature industry and while there are moves by some marketing groups toward innovative marketing practices the majority of sales are of generic, undifferentiated product.

Notwithstanding major changes in the marketing approach and allowing for seasonal factors (oversupply/undersupply swings, cyclones, exotic disease outbreaks, etc.), it can be expected that industry expansion should, as is the case with mature markets, at least follow population growth.

Australian banana varieties are available throughout the year. Tropical north Qld production is year-round with a labour supply/market induced dip at Christmas and the New Year. The subtropical industry has a summer/autumn production peak.

Table Eight: Australian Banana Seasons – Best Supply Months

Variety	J	F	M	A	M	J	J	A	S	O	N	D
FNQ												
Subtropical												

Source: Industry consultation (TSSD 2008)

As far back as 1999, Deborah Wilson Consulting reported that retailers were concerned with a cycle of over-supply / under-supply of bananas which places pressure on profitability for all parties in the supply chain. Interestingly many growers did not appear too concerned about the peaks and troughs, arguing that the roller coaster was part of the banana industry culture and peaks provided the profit needed to ride out the troughs. Some speculated that this was part of the risk profile of the industry and if a grower did not like the risk then the grower was not suited to the industry. Others argued for a more sophisticated approach with more effort on developing and populating forecasting tools.

People

Labour is the dominant cost in the production of bananas. Within the industry there are basically 2 views of the cost of production:

- those that believe that the cost of production is around $13 per carton; and
- those that believe that the cost of production is around $18 to $20 per carton.

Those that believe that the cost of production is around $13 per

carton do not take labour costs (either payed or family labour) into account.

Table Nine, taken from the TSSD project, provides a brief overview of the industry's human capital attributes.

Table Nine: Human Capital Attributes

Attribute	Description
Training programs	• On the job training programs the norm • High cost of training due to high worker turnover • Little if any Recognised Prior Learning at the current time • Potential for improved job rotation to increase diversity of skill sets
Education programs	• At the worker level (not growers) industry attracts bi-modal education demographics: lower education status local workforce and some higher education status itinerant workers such as international backpackers demographics • Industry predominately semi-skilled and unskilled • On the job training provided • Education programs such as student pathways required to supply middle management positions • Lack of skills across industry. Specific skill sets for supervisory roles especially critical. • Continuing reduction in State Govt extension and R&D staff • Little business skill training
Profile of labour force (based on Warmington 2007 survey of tropical north Qld)	• Reputation as being a 'hard yakka' - difficult and demanding field conditions • supply and retention of labour are a constant problem for industry • 57% men and 43% women make up the work force • 76% full time casuals with 14% permanent • 38% under 25 years • 36% have worked in industry for less than 6 months and 24% for over 10 years • 42% of growers have 10-20 employees • 79% of growers do not supply on-farm accommodation due to OH&S and Local Government regulations • industry is highly reliant on casual labour • smaller operations depend heavily on 'family labour • further initiatives are needed to secure labour supply.
Skill level	• Short-term cyclic nature of the industry impacts on retaining skilled labour • Significant itinerant, including backpacker workforce • Little or no career pathways • Skill levels lacking across the range of required skills • Growers receiving less advisory services due to loss of State Government extension staff • Growers seeking business management, people management and industry leadership skills • Leadership succession planning an ongoing issue

Source: TSSD (2008)

Table Ten provides a brief overview of the industry's R&D attributes taken from the TSSD.

Table Ten: R&D Attributes

Attribute	Description
R&D expenditure	• Low – under-investment compared to horticultural industries with a compulsory levy in place (Higher prior to abolition of state levies in 2003).
R&D adoption rate	• High for large scale tropical north Qld growers • High for Carnarvon WA subtropical growers • Low for small-scale subtropical east coast growers.
Research and extension base	• Tropical north Qld well served by experienced professionals. Care needed to ensure 'critical mass' of skills/experience not lost. Maintaining core R&D capability is a major issue. The lack of young scientists training for plant pathology is a concern. Subtropical industry is even less well served than tropical north Qld.
R&D information sharing	• High – information distributed electronically and by newsletter. Sound communication processes in place. Field days are effective in FNQ.
Successes	• Research successes in reducing reliance on insecticides and fertilisers with cost and environmental savings.
Future high priorities	• Broaden from traditional production R&D to consider all priority strategic planning issues • R&D system is one of Australia's comparative advantages relative to low cost international producers. • Understanding industry's competitive position on a world stage • Mechanisation research • Quality and taste parameters

Source: TSSD (2008)

Industry organisation

The TSSD project found that most banana industry organisations are considered to be functioning effectively on behalf of their members and there was high praise from nearly all stakeholder groups for ABGC.

The key policy issues identified in the TSSD report requiring attention include:

- possible imports
- labour availability and retention
- accommodation
- landuse planning
- environmental performance and carbon budgeting
- industry Occupational Health and Safety.

Strategy, information and communication issues include the lack of a current strategic plan (a new strategic planning process is

working in parallel with the industry needs assessment) and the workability of an effective supply-forecasting tool. Communication along the value chain and between producers was found to be effective.

National Organisation

The Australian Banana Growers Council

The Australian Banana Growers' Council Inc. (ABGC) is the Australian banana industry's peak national agripolitical organisation and represents Australia's 1200 banana growers (covering 800 enterprises). It was established in February 1961 and on 31 August 1992 it took the initiative of creating a full-time National Secretariat based in Brisbane.

The ABGC's Mission Statement is:

> *"The Australian Banana Growers' Council Inc will represent the interests of Australian banana growers by:*
>
> - *formulating and advocating industry policy;*
> - *communicating information;*
> - *promoting best practice in*
>   - *marketing and*
>   - *environmental management;*
> - *fostering research and development; and*
> - *engaging in all related activities which together will lead to the long term prosperity of the Australian banana growing industry."*

The ABGC's Board of Directors is made up of five Queensland Directors, two New South Wales Directors and one Director from either the Northern Territory or Western Australia. The Board is responsible for the general control and management of the administration of the ABGC's affairs, property and funds. ABGC members directly elect Directors to the ABGC Board.

State Associations

Bananas NSW

Bananas NSW, formerly the NSW Banana Industry Committee (BIC), is constituted under the NSW Banana Industry Act 1987. The Act no longer contains any provisions relating to the buying and selling of bananas and has been retained only for disease control. A levy is imposed under the Act for Bunchy Top control. The levy is currently set at a higher rate for northern NSW where the disease is present and a lower rate in the Coffs Harbour area in an effort to prevent its spread south.

The NSW industry is currently reviewing the ongoing relevance of Bananas NSW with a national levy in place and a greater role for ABGC, the national body.

Growcom Qld

Growcom provides representation for Queensland horticulture (including bananas). Queensland had a state based statutory levy via Growcom's predecessor until 2003, however the subsequent voluntary levy was not seen to be working effectively.

WA Industry Organisation

A significant number of growers are members of the Sweeter Banana Cooperative and this is a valuable forum for information exchange.

Funding

The ABGC is funded through membership fees. At present the fee is three cents per 13kg carton of bananas sold.

Horticulture Australia Limited (HAL) manages the Australian banana industry's R&D program. Until recently when the new levy was put in place, the budget consisted solely of industry voluntary contributions (VCs) and matching funding from the Australian Government. VCs are provided through a range of sources, mainly state-based industry bodies and ABGC (Banana Annual industry Report 2004 and 2005).

The Australian banana industry voted overwhelmingly to support the statutory national levy which came into effect from 1 July 2008. The levy is based on a set 1.7c/kg (22c/13kg carton) with 1.16c/kg being directed to promotion and 0.54c/kg to R&D and plant protection. With the new levy in place, the industry has a secure budget of around $2 million pa for R&D and around $2.6 million pa for marketing/promotions.

Australian banana industry R&D funding and expenditure is shown in Table Eleven.

Under voluntary arrangements banana industry R&D expenditure was $0.8 million or 0.24% of industry GVP ($330 million).

By way of contrast, the summerfruit industry has invested 0.3% of industry GVP in R&D, the citrus industry has invested 0.5% of GVP and the apple and pear industry 0.8% of GVP over the same period. All of these horticultural industries have a compulsory levy in place.

The banana industry invested a higher proportion of GVP in R&D prior to the abolition of state R&D levies in 2003. Industry R&D investment then was between $1.2 million and $1.4 million pa (Bob Williams, QDPI&F pers comm.)

Table Eleven: Australian Banana Industry R&D Program

	2003/04	2004/05	2005/06	2006/07	2007/08
Funds available at 1 July	$77,722	$59,635	$31,486	$43,000	$43,992
INCOME					
Voluntary Contributions	$259,167	$403,864	$360,154	$401,172	$462,180
Commonwealth Contributions	$267,975	$426,829	$348,539	$397,084	$277,904
Other Income					
Total Income	**$527,142**	**$830,693**	**$708,692**	**$798,256**	**$540,084**
PROGRAMME INVESTMENT					
VC Contributions	$490,522	$772,146	$631,596	$712,905	$505,326
Across Industry Funding	$9,276	$5,184	$0	$3,197	$5,508
Service Delivery Programmes by HAL	$45,431	$81,512	$65,482	$81,262	$50,481
Total Investment	**$545,229**	**$858,842**	**$697,078**	**$797,364**	**$561,315**
Annual Surplus/Deficit	-$18,087	-$28,149	$11,614	$892	$21,231
Funds Available 30 June	$59,635	$31,486	$43,100	$43,992	$22,761

Source: Updated from TSSD (2008)

Technical information and communication

The Australian Banana Growers' Council publishes a magazine every six-months 'Australian Bananas' that communicates national issues and research findings. The R&D section of the ABGC magazine is jointly funded with HAL. Consultation suggested a high degree of satisfaction with the style and content matching information needs.

A biennial congress, hosted by the Australian Banana Growers' Council, showcases the national industry and covers topical issues and research findings. Consultation suggested satisfaction with the regularity, content and opportunities to network and learn of the Congress.

Industry communication occurs regionally via channels including newsletters (eg Bananas NSW publication the ‘Banana Bulletin’), field days and Local Producer Association meetings.

The Industry’s communication plan is currently under review.

Biosecurity and risk management

Because of its proximity to Cape York and the Torres Strait islands, the north Qld banana industry must be constantly on guard against the introduction of exotic pests and diseases (Australian Bananas June 2007).

The main current disease threats are Bunchy Top (NSW border region endemic), Tropical Race 4 Panama (responsible for contraction of the Darwin NT industry), Race 1 Panama (affects Ladyfingers and Duccase and present in the NSW industry), Sub-tropical Race 4 (affects Cavendish) and potential recurrence of Black Sigatoka diseases (appeared and eradicated in 2001). Other endemic disease threats include Yellow Sigatoka, bunch pests and weevil borer. Parts of the NSW industry identify flying foxes as ‘the

single greatest' threat to production.

The industry has a National Banana Industry Biosecurity Plan (version 1, February 2004), however additional specialist resources are required to maintain surveillance, diagnosis, monitoring and control/eradication strategies. The Queensland-based Industry Development Officer has established a grower database that should assist in the event of future disease outbreaks. Additional work is required if imports become part of the Australian domestic supply chain.

Community relationships

Environmental impact will shape resource sustainability and community attitudes to the industry. The TSSD study found that although the industry is currently perceived as a producer of clean and healthy products with few environmental challenges, the industry's environmental performance and credentials are yet to be demonstrated to the market.

The focus on the catchment health of rivers and potential impacts on the Great Barrier Reef World Heritage Area in Queensland and peri-urban issues such as chemical use generally in NSW are significant strategic issues to be addressed.

Demonstrated environmental sustainability and performance of the industry to regulators and consumers remains an area for constant attention.

Summary

The Australian banana industry is an important part of the fresh food production system in Australia, which to date has been protected through biosecurity considerations from global competition. Production is not highly profitable in average years, and profitability in the northern NSW where labour is a high proportion of total input costs is of particular concern. A summary of the industry's characteristics is in Table Twelve.

Table Twelve: Summary of Attributes of the Australian Banana Industry taken from the TSSD

Attribute	Description
Gross value of production, measured at wholesale	Variable around $320 million to $350 million farm gate, forecast to be constant in real value GVP. Prior to Cyclone 'Larry' production appeared to be growing.
Geographic concentration	90% of production volume concentrated in one cyclone prone region in FNQ.
Scale	Mixed – from small and sub-economic to large integrated across the supply chain. Medium sized enterprises most vulnerable to any future negative developments.
Number of enterprises in the industry and distribution by size	Approximately 800 enterprises in industry of which 200 produce 80% of the product. Top 18% are profitable.
Production	264,000 tonnes from 10,000 ha
Degree of enterprise level diversification, measured as the share of total enterprise turnover in that activity	Tropical north Qld growers tend to be banana specialists. The subtropical industry is diversified.
Products (varieties)	Near universal reliance on a single variety.
Diversification – geographic	Not diversified and a major risk for the industry.
Use of technology	Additional mechanisation needed Covered production a possibility
Investment – new capital	Larger growers continuing to invest. Some investment in niche markets
Cost of Production/production efficiency	No domestic or international benchmarks (domestic benchmarking a low cost exercise) Cost of production generally considered higher than overseas producers.
Profitability	Larger operations in Tropical North Qld profitable. Innovative subtropical growers also profitable. 'Average' subtropical producers will struggle in the longer term.
Transport	Supply chain integration needed.

3. Current Australian Banana Industry development activities

The Australian banana industry currently has the following projects underway regarding industry development:

Table Nine: Australian Banana Industry development activities

Activity	Facilitating the development of the Queensland Banana Industry (BA06003)
Brief description	The aim of this project is to improve access to information and opportunities for Queensland banana growers. It will also improve communication between growers and external stakeholders including industry groups and government agencies. The main issue to be addressed is Natural Resource Management and supply chain coordination. The benefits include viable industry with a more stable and predictable income pattern. The benefits will also flow through the supply chain as the supply will be regulated and pricing maintained.
Intended Outcomes	i. The banana industry remains at the forefront of environmental issues. ii. Successful implementation of the Banana Crop Forecasting System. iii. Growers to operate sustainable and profitable farm enterprises; lowering costs and increasing labour retention rates.
Project Start Date	16/09/2006
Final Report Due Date	16/09/2009
Value of Funding	$419,997 (Managed by HAL)
Managed by	GROWCOM
Review comment	The project as stated is unclear as to whether the focus is on NRM, profitability, supply-chain regulation or forecasting. A single project cannot realistically achieve such broad objectives for the budget provided. The new strategic plan is likely to see greater specialisation in projects within a coordinated program context.

Activity	Australian Banana Growers Communication Program (BA06006)
Brief description	The aim of this project is to develop and implement a national communications strategy utilising a suite of communication tools that will foster communication of relevant information across and between all sectors of the banana industry. The ABGC recognises through the communications strategy the importance of more effectively linking growers and supply chain participants together by sharing information at a national level. The specific issues addressed by this project include: • The development of a national strategy for delivering information to growers and supply chain participants that is supported by all stakeholders. • Reduce the amount of cross-over between industry bodies with respect to the communication of information. • Enhancement of the timeliness, quality and reliability of the information that is communicated.
Intended Outcomes	i. The capacity for better decision making through access to relevant and reliable information about things that influence banana production and marketing. ii. A reduction in non-compliance by businesses with respect to their obligations in the areas of product specifications and government regulations. iii. An increase in adoption of new technologies and research outcomes resulting in increased productivity and eventually profitability.
Project Start Date	01/08/2006
Final Report Due Date	31/07/2009
Value of Funding	$198,430 (Managed by HAL)
Managed by	ABGC
Review comment	This project has elements of both communication and extension, neither of which can be undertaken effectively given the budget. Achievements have been commendable, but communication activities in future need to be embedded into a more comprehensive strategy of change management suggested in Section 3 of this Needs Assessment report.

Activity	Strategic banana tissue culture research, industry development and biosecurity activities (BA07001)
Brief description	This project facilitates safe entry of new banana varieties by implementing stringent screening processes via an AQIS-approved plant tissue culture laboratory. New varieties are imported for research investigating resistance to disease or as varieties that may have improved agronomic yield or qualities that may be demanded by emerging markets (niche varieties, functional food). The Quality Banana Approved Nursery (QBAN) scheme allows industry to remove the risk of spreading pests and diseases and allows growers to establish clean blocks. Ongoing support is provided from this project to assist laboratories, nurseries and growers to overcome problems and improve efficiencies of the QBAN scheme. QBAN is currently adopted by NSW & Qld. under two sets of State regulation.
Intended Outcomes	This project uses plant tissue culture to support a range of research, industry development and disease exclusion programs by safely maintaining and providing access to Australia's banana collection as virus indexed plantlets. Outcomes include: i. Improved farm management, control over crop cycle, uniformity for timely harvest and improved yield in the plant crop ii. Productivity gains by using planting material that does not contain pests (beetle, nematode) or disease iii. Increased grower uptake of tissue culture to improve efficiency and profitability of the Australian banana industry.
Project Start Date	01/08/2008
Final Report Due Date	17/12/2010
Value of Funding	$489,484 (Managed by HAL) $1,061,822 (Not Managed by HAL)
Managed by	QLD Department of Primary Industries & Fisheries
Review comment	This project is very ambitious, but delivers critically important biosecurity outcomes for the industry. The project needs to be closely aligned to the quality assurance and benchmarking systems proposed in the new strategic plan in order to deliver on the 3 non-biosecurity outcomes listed above.

Activity	Growing Subtropical Bananas for Quality and Yield (BA08003)
Brief description	The aim of this proposal is to develop innovative management and production techniques for the production of high quality bananas from subtropical Australia. The strategy used involves four stages: • determination of best practice management for subtropical bananas • conduct of a survey of subtropical banana growers to benchmark current banana production practices for incorporation into extension material and to provide a reference point for evaluation of the project • economic assessment of the advantages and benefits of growing bananas under permanent protective structures versus field grown bananas • production of an extension package to be used by all commercial growers of subtropical bananas. The proposed output from this project will be a manual detailing production techniques for subtropical bananas.
Intended Outcomes	i. An increase in the capacity of sub-tropical banana growers to produce a high quality product. ii. 50% of growers adopting the management system by 2013 and 10% adoption across the wider industry. iii. An increase in the viability of commercial subtropical banana growers through increased knowledge capacity. iv. An increase in demand for subtropical bananas by supplying consumers with consistent high quality product with a sweet intense flavour. v. The total gross value of the Australian sub-tropical banana industry will subsequently increase from $17 million to $20 million by 2013.
Project Start Date	01/09/2008
Final Report Due Date	30/11/2013
Value of Funding	$166,000 (Managed by HAL) $236,000 (Not Managed by HAL)
Managed by	Department of Agriculture & Food Western Australia
Review comment	This project has a sound approach, realistic timeframe and clearly quantified outcomes. It is, however, very ambitious for the budget, and may need review.

Activity	Demonstrating the benefits of early establishment of tissue culture plants to the NSW banana industry (BA08010)
Brief description	The purpose of this project is to demonstrate to NSW and southern Queensland growers that the small additional cost of using tissue culture plants provides significant benefits, including exclusion of diseases and pests, more efficient plantation management operations and more uniform bunch productivity. The project involves a large replicated trial comparing different planting times and planting materials (tissue culture vs conventional) at the Centre for Tropical Horticulture at Alstonville, NSW. Outputs from this project include guidelines on effective use of tissue culture plants to establish new banana plantations, and a field day at the trial site to promote the benefits of tissue culture. An economic analysis highlighting the costs and flow on benefits from use of tissue culture will also be presented to industry.
Intended Outcomes	i. Clarification of the economic advantages of planting tissue cultured banana plants. ii. Improved industry knowledge of the efficiencies gained from using tissue cultured planting material. ii. Changed perception of the value for money of disease free tissue culture planting material in sub-tropical banana production regions. iv. Adoption of use of tissue culture material across 50% of the industry by 2010. v. Acceptance in certain regions (ie Nambucca) that use of tissue culture material can help maintain their disease free status. vi. Enhancement of existing biosecurity measures in place to limit the spread of problem diseases such as banana bunchy top virus and Panama disease.
Project Start Date	01/10/2008
Final Report Due Date	30/08/2009
Value of Funding	$17,250 (Managed by HAL) $18,040 (Not Managed by HAL)
Managed by	NSW Department of Primary Industries (NSW DPI)
Review comment	This project has a strong overlap with BA07001, though far smaller in its scope. Projects of this size would be better placed in future within a program context over a longer period to reduce transaction costs and improve the wider context within which they are delivered.

Activity	Australian Banana Industry Strategic Plan: 2009 - 2014 (BA08018) and Economic Analysis (BA08024)
Brief description	This project underpins the development of the 2009-2014 strategic plan for the Australian Banana Industry. It includes economic analysis of alternative investments scenarios using the Hi_Link model developed through the Future Focus project. It also includes the preparation of an industry development needs assessment (associated with this report).
Intended Outcomes	i. Well focussed investments in R&D and marketing programs that deliver optimum return on investment for the banana industry ii. Ownership and confidence in the plan by key industry stakeholders responsible for actioning the plan
Project Start Date	27/10/2008
Final Report Due Date	27/03/2009
Value of Funding	$55,700 (Managed by HAL)
Managed by	Kiri-ganai Research
Review comment	The capacity to implement any five year plan can be reduced by the level of carry-over activities inherited by the plan. This makes taking new approaches to program management and holistic extension a challenge.

Activity	Banana congress 2009 (BA08012)
Brief description	This project is to provide funding towards the 2009 Banana Industry Congress to be held at the Gold Coast, 4-6 June 2009
Intended Outcomes	i. Improved cooperation and understanding between the various sectors of the industry of the challenges faced by each sector and the impact those challenges have on other sectors.
Project Start Date	01/03/2009
Final Report Due Date	31/12/2009
Value of Funding	$100,000 (Managed by HAL)
Managed by	ABGC
Review comment	The launch of the new strategic plan times well with the congress and the plan itself can act as a tangible focal point for gaining improved cooperation and co-investment.

Activity	Banana 2008/09 Partnership Agreement/Consultation Funding (BA08900 & BA08910)
Brief description	This project covers the ABGC-HAL consultation costs. It includes funding of the IAC, levy payers meeting, attendance at HAL forums and industry international networking.
Intended Outcomes	i. Increased capacity of the industry's peak industry body
Project Start Date	01/07/2008
Final Report Due Date	30/06/2009
Value of Funding	$196,775 (Managed by HAL)
Managed by	ABGC
Review comment	The new strategic plan can form the basis of a more encompassing approach to supporting the various industry bodies in future, including support for industry development activities outlined in this report.

Activity	Sub tropical banana industry communications (BA08013)
Brief description	The overall aim of the proposal is to provide the most effective means of identifying and communicating information that is of relevance and interest to sub tropical banana industry stakeholders but most especially sub tropical producers. The Australian Banana Growers' Council believes that this is the best way to ensure that those sub tropical banana producers that see a long term future for themselves in the banana industry have access to information that will assist them in achieving their objective.
Intended Outcomes	i. Improved communication in the subtropical banana sector
Project Start Date	01/02/2009
Final Report Due Date	31/12/2009
Value of Funding	$94,480 (Managed by HAL)
Managed by	Green PR
Review comment	This project as with other communication projects in future needs to develop market segmentation (even within a single region) to ensure that different key messages are delivered through the range of mechanisms appropriate for each target.

4. Future industry development needs

Issues for industry development attention

The following issues have been identified through the TSSD and Strategic Planning projects as areas that warrant attention from an industry development perspective:

- Industry's growth is only broadly in line with population growth. A lack of skilled labour is impeding greater industry growth (although labour availability fluctuates with the health of competing industries, including mining).
- Profitability is scale and innovation dependent, and there is considerable variability in capacity, both individually and regionally, to change the productivity ratio.
- There are perceived risks, especially articulated by retailers, in relation to the geographic concentration of the industry.
- While no international benchmarks exist, production costs are generally considered to be higher than overseas producers.
- Opportunities may be available for reducing input costs through further mechanisation, diversification and through chain collaboration, especially in relation to transport.
- Although the industry is perceived as a producer of clean and green, the industry's environmental performance and credentials are yet to be demonstrated to the market. This is not simply a communication issue but also a practice change one.
- If the industry does not respond to consumers' need for an expanded range of banana products, a gap or an opportunity may be created in the market which may be filled by imports.
- Little branding and product differentiation is undertaken and there is scope for more banana varieties and greater promotion of production systems.
- While industry stakeholders report an ongoing reluctance to share information, industry customers (retailers and wholesalers) place a high priority on improved supply forecasting.
- The TSSD project suggests that current R,D & E investment in the banana industry is comparatively low but adoption rates are relatively high.

Priorities for improvement:

The following priorities have been taken into account in the development of the Australian Banana Industry Strategic Plan 2009-2014:

- A focus on customers is paramount to build consumption and profitability. This requires a culture shift throughout the industry.
- Subtropical industry profitability must improve. In the longer-term, average producers will struggle to remain profitable with current technology, marketing and business management systems.
- There is a need for tools to measure comparative enterprise performance and tools to measure the impact of management decisions/options on returns.
- Demonstrating environmental performance and sustainability is a strategic priority from both a policy and marketing perspective.
- Value adding through differentiation needs to be more widely practiced. There are few exceptions to a largely homogenous, production oriented, single variety industry and commodity ("Cavendish cult').
- The industry must improve its competitiveness to compete with potential international competitors on an undifferentiated product basis.
- A forum for information exchange with major supermarkets and other parts of the supply chain is needed.
- While exports are almost non-existent, innovative producers are recognising opportunities, but receive little industry support.
- R&D and additional public and industry bio-security resources are required.
- Many growers need help to overcome the difficulties in sourcing and retaining suitable field and packing labour.
- Maintaining R&D capability is necessary to underpin industry competiveness and innovation.
- Risk management plans are needed for post import access (commercial perspective), exotic pest/disease outbreak (national perspective), cyclones (industry planning) and long-term climate variability (industry planning).

Industry development needs to support the strategic plan

The Australian Banana Industry Strategic Plan 2009-2014 identifies three objectives, nine strategies and twenty-eight key investment areas. The relationship between the Objectives and strategies is outlined in Figure Four.

Figure Five: The Australian Banana Industry Strategic Plan

The industry development needs are identified below in respect to each of the key investment areas:

Table Nine: Industry development needs according to Strategic Plan

Objective 1: Increase consumer demand for Australian bananas by 15% by 2014 through marketing, promotion and product development	
Strategy 1.1 Build the Australian Banana Brand through research and promotion	
Key Investment Area	Industry development need
1.1.1 Develop and implement a domestic market research program that informs effective promotion of Australian bananas	Information from the market research program should be interpreted for and communicated to different target audiences. Through a coordinated approach, this research should link closely with other marketing and promotion activities and R&D. It is important that everyone across an industry is aware of consumers' expectations, and this requires a concerted education and awareness effort.
1.1.2 Strengthen the Australia Banana Brand presence through national promotion, building on bananas' favourable attributes and environmental appeal	Branding must be consistent and ever-present. This will require considerable coordination both in terms of promotion activities as well as ensuring the brand is strongly supported across banana businesses and throughout the value chain. The industry should also seek to collaborate in cross-horticultural initiatives aimed at increasing overall consumption of fresh food. Building commitment to quality and the brand at every level of the industry is an essential development need.
Strategy 1.2 Satisfy our customers by understanding and specifying delivery against what appeals to them	
Key Investment Area	Industry development need
1.2.1 Conduct supply chain analyses to determine the factors throughout the chain preventing the reliable delivery of bananas at retail level that match consumer expectations	Identifying the limiting factors is important, but communicating the required responses and rallying commitment to adopting the required responses are vital. A post-farm gate extension strategy is required to deal with this and the following 6 investment areas to maximise adoption.
1.2.2 Ensure the industry delivers to consumers the range of size and ripeness of fresh bananas that match consumer needs	As with the previous activity, this requires a close relationship between researchers, marketers and value chain participants at all levels including growers. This activity should link with a post-farm gate extension strategy.
1.2.3 Ensure packaging, display and presentation to maximize the overall appeal to the consumer	While there is an element of research required to complement this activity this activity requires substantial negotiation and coordination across the value chain. This activity should link with a post-farm gate extension strategy
Strategy 1.3 Diversify the eating occasions for Australian bananas to increase consumption and reduce wastage	
Key Investment Area	Industry development need
1.3.1 Develop and promote alternative usage ideas for the full range of bananas	This activity should link with a post-farm gate extension strategy
1.3.2 Expand the product range within the fresh banana category through the exploitation of	This activity requires substantial collaboration between industry researchers and the value chain. The research

varieties with high consumer appeal and viable agronomic and supply chain performance	capacity in this area is limited and requires development.
1.3.3 Enhance the range of value added products that use Australian bananas in response to market research feedback	This activity should link with a post-farm gate extension strategy
1.3.4 Capture maximum share of the snack food market through innovative product placement and distribution, supported by appropriate promotion under strategy 1.1	This activity should link with a post-farm gate extension strategy
Objective 2 Increase production efficiency by 5% by 2014 with minimal to no environmental impact	
Strategy 2.1 Improve banana production and supply systems and quality through innovation and benchmarking	
Key Investment Area	Industry development need
2.1.1 Establish benchmarking tools to measure and continuously improve enterprise performance and business systems	This activity requires a comprehensive approach to benchmarking and is intended to be placed within a broader industry extension framework to ensure that benchmarking activities include awareness, participation and continuous improvement initiatives.
2.1.2 Improve production systems through on-farm innovation, with a particular emphasis on mechanisation, to reduce costs of production	This is a significant area of research activity and should be undertaken as on-farm participatory research to the full extent possible. This will mean close alignment to a comprehensive industry extension plan.
2.1.3 Improve profitability across the value chain by identifying opportunities to improve efficient supply beyond the farm-gate	This activity requires substantial coordination across the value chain and must start with establishing and selling the benefits of value chain participation and co-investment. This activity should link with a post-farm gate extension strategy
2.1.4 Establish practices that enhance fruit quality throughout the value chain	While 2.1.3 deals with linkages across the value chain, this deals with improving practices within value chain sectors. It requires collaboration with the value chain in R&D extension activities specifically designed around the peculiarities of each value chain sector. This activity should link with a post-farm gate extension strategy
Strategy 2.2 Improve utilization of waste to maximize profitable returns from each harvest	
Key Investment Area	Industry development need
2.2.1 Reduce waste product through identifying and eliminating on-farm practices currently contributing to waste	This activity should closely align to a comprehensive industry extension plan, following the development of an industry waste plan.
2.2.2 Develop alternative uses of banana plant waste in a range of products	This activity requires considerable innovation and co-investment with value-chain and possibly non-banana industry participants. It requires a champion to push it.

Strategy 2.3 Safeguard industry production systems and markets through protecting the integrity of Australian bananas	
Key Investment Area	Industry development need
2.3.1 Strengthen plant protection planning and preparedness to ensure the long-term integrity of Australian bananas	This review must be undertaken and reported with different target audiences in mind (see 2.3.2). Biosecurity is a vital but contentious issue for the industry and requires a more coordinated approach through a program framework. While such a framework does not replace the need for industry development activities in this area, it does establish an appropriate learning environment and context.
2.3.2 Improve industry and community awareness of plant protection issues to facilitate a concerted focus on protecting the long-term integrity of Australian bananas	A comprehensive communication strategy based around different key messages for different key target audiences is required, with coordinated implementation of the strategy.
2.3.3 Maintain and enhance scientific and technical support capability to ensure threats to Australian banana health can be prevented or rapidly ameliorated	Limited capacity can be increased through a scholarship scheme, by supporting events where existing expertise feel acknowledged and appreciated and by facilitating communication among the plant protection community.
Strategy 2.4 Safeguard the environment and society through improving the environmental integrity of Australian banana production	
Key Investment Area	Industry development need
2.4.1 Quantify the Australian banana industry's environmental performance	Environmental sustainability should not be separated from 'good farming practice' and therefore the extension initiatives for this should be closely linked with 2.1.2.
2.4.2 Investigate the efficacy of, and if feasible, establish a mechanism to demonstrate the environmental integrity of Australian bananas to consumers	Any impending QA system should be thought through clearly as such systems are fraught with challenges. A new system or framework should acknowledge the existence of other systems already adopted by banana growers and not seek to replace these if it puts good, long-standing relationships between growers and value-chain contractors at risk.
2.4.3 Increase awareness of the banana industry environmental profile specific to target markets outlined in the industry's communication plan	The R&D associated with this activity must be undertaken and reported with different target audiences in mind and closely link with 1.1.2, 3.2.2 and 3.2.4.
Objective 3 Ensure a positive return on investment of industry levies by enhancing the industry's leadership, capacity and influence	
Strategy 3.1 Strengthen current and future industry leadership and capacity to ensure long-term sound stewardship of the Australian banana industry	
Key Investment Area	Industry development need
3.1.1 Develop leadership and governance skills of current leaders to enhance the effectiveness of industry structures	This is largely a training activity, although good governance principles should also be reflected in how industry organisations do their business (ie structure their organisations, structure their Board agendas and discussions etcetera).
3.1.2 Develop a succession plan across ABGC, and facilitate	Succession planning workshops exist that can be tailored, however, a concerted effort is required to communicate the

succession planning at regional and enterprise level, to ensure the industry has a strong pool of long-term potential leadership talent at every level	benefits of attendance among people that are either too busy, sceptical or in-denial of the need for such training.
3.1.3 Develop and advocate industry policy positions on issues that impact the banana industry and its surrounding communities to secure the long-term provision of Australian bananas to consumers	Effective advocacy requires a mix of strategies from good media management, face-to-face negotiation and relationship and partnership building. The 'rolling thunder' concept of continuous but intangible presence can be effective, but requires a comprehensive communication strategy in place (3.2.2).
3.1.4 Attract young researchers and extension support into the industry to ensure the long-term capacity to address the technical, social and economic issues that will continue to confront the industry	Like 2.3.3, limited capacity can be increased through a scholarship scheme, by supporting events where young participants feel acknowledged and appreciated and by facilitating communication among new and emerging participants.
Strategy 3.2 Improve two-way communication & knowledge transfer to underpin better industry and business decisions and improve stakeholder confidence in the industry	
Key Investment Area	Industry development need
3.2.1 Collect and communicate to industry members improved information on production and markets, including forecasts, to underpin production, product development and distribution decisions	This activity requires very specialised skills in data interpretation as well as plain-english communication of highly technical information. There are different target audiences for this information and so segmentation and a range of products is required.
3.2.2 Develop and implement a comprehensive industry communication plan to ensure that industry members, stakeholders and the public are well informed about the benefits of the Australian banana industry and support its ongoing contribution	Good communication strategies recognise different key messages through different and multiple communication mechanisms to different target audiences. No less than 10 per cent of an industry's budget should be dedicated to communication.
3.2.3 Provide forums for regular value-chain interaction to ensure effective relationships between sectors that enhance cooperation, co-investment and industry efficiency	This activity needs to be more than event based. It will be important for constant communication to be facilitated through the supply chain so that there is follow-up to agreed actions and constant awareness of different and shared policy positions. Relationship building and maintenance is the key to the success of this activity.
3.2.4 Document industry contributions to regional economies and the environment to underpin promotion and stakeholder communication	This activity needs to be underpinned by defensible research so that the claims do not appear as propaganda. The outputs should be developed with a range of target audiences in mind (see 3.2.2)
3.2.5 Improve extension and adoption of industry best practice through comprehensive	This is the key industry development need in support of the strategic plan as a comprehensive strategy should tie many of the different activities together. At present the banana industry does not take a program approach to

program-based extension strategies	investing in activities, although such a shift would complement integrated extension approaches to be supported across different activities. (Simply, there are not enough resources available to support separate extension efforts for different research activities.). A comprehensive extension strategy should take into account the extension models outlined in section 3 of this Needs Assessment report.
Strategy 3.3 Develop effective risk management capability to enhance industry resilience and response to a range of potential emergencies	
Key Investment Area	Industry development need
3.3.1 Strengthen current industry emergency plans to underpin rapid response to emergencies	This review must be undertaken and reported with different target audiences in mind (see 2.3.2)
3.3.2 Educate growers on the emergency plans and carry out training exercises to ensure industry preparedness for a range of emergencies	This is largely a training exercise, but needs a process that maximises awareness and participation.
3.3.3 Enhance industry resilience to natural disasters by increasing the diversity of regions where bananas are grown and exploring the use of alternative production systems	Extending industries into new regions is a long-term process that requires not only good science (land-use capability assessments) but also good relationship management with government, regional and local authorities as well as with local communities. Improving production systems must be tied to the R&D efforts outlined under 2.1.2 and 2.4.1.

5. Future directions for the Australian Banana industry development

A coordinated approach to Industry Development

Developing industry capacity to deliver the Australian Banana Industry's new strategic plan, maximise adoption of the results of industry investment, and ensure profitable and sustainable industry growth requires an approach that makes strategic use of limited resources. The traditional project-by-project approach, ensuring each activity has a communication or extension component is expensive and has been shown to have variable success across a range of industries. For this reason, a range of strategies is proposed to ensure that data, information and knowledge are generated through shared learning processes and smartly disseminated so that the right people have the right information at the right time to make better decisions. The strategies proposed are:

- Grower development through smart extension
- Value chain development through relationship building and collaborative and participatory research
- Informed decision making through targeted communication
- Securing the future through scholarships and professional development.

Grower development through benchmarking and smart extension

From an extension perspective, no two growers are exactly the same and their learning context can be individualised by their location, family and social circumstances and networks, business model, access to capital, risk profile, personal aspirations and so forth. For this reason, good extension requires a range of learning methods - something which is simply not possible on a project-by-project basis.

Recommendation: A coordinated approach to extension should be adopted that ties extension strategies around related areas of knowledge (i.e. across projects) and embraces a process of continuous learning (comparative benchmarking). The Australian Banana Industry should appoint a national extension coordinator to support the extension efforts of the three main growing regions through a coordinated National Australian Banana Industry Extension Strategy.

Extension

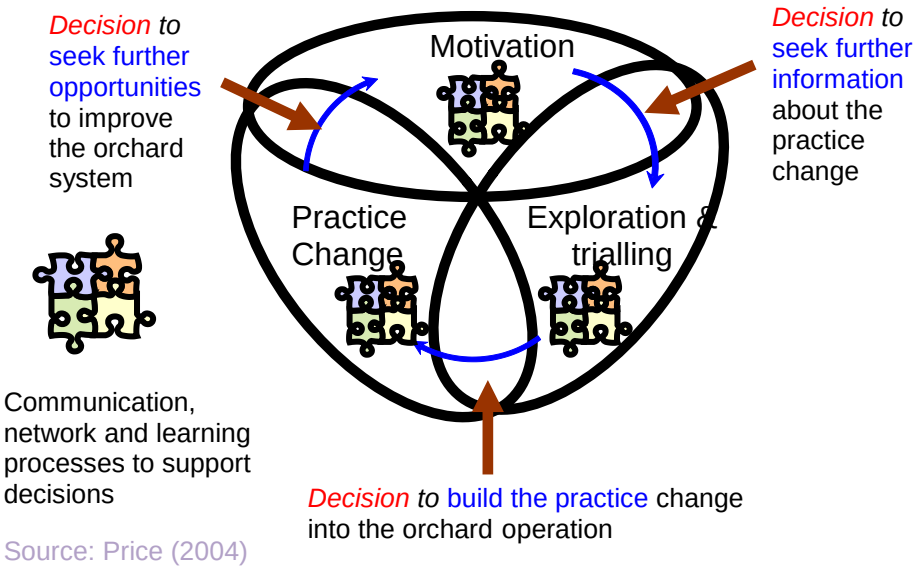
Experience from a range of agricultural industries suggests that underpinning any effective extension strategy is a practice change

model based on:

- stimulating motivation;
- facilitating trials; and
- demonstrating benefits from change (see model below).

The practice change model recognises that different growers move through a learning cycle in different ways and at different paces. In response to this, the model establishes a framework which can deal with very different demands for specific kinds of information and activities when and as needed by different participants.

Figure Six: A Potential Practice Change Model



Source: Price (2004)

Motivation stage: This stage of the model looks at opportunities to support people who have indicated a genuine desire to want to change practice but may need support to work through associated issues with the proposed change. People at this point of the change cycle have usually been exposed to the opportunities that a practice change will provide and are wanting to capture a relative advantage by changing. Identifying people at this stage of the change cycle is critical and ensures appropriate techniques can then be used to stimulate discussion on perceived barriers to change, possibilities to work through issues identified and nurturing of confidence that change is possible and achievable.

Exploration and trialling stage: This stage involves planning what changes to make and how to make them. Enhancing skills and understanding is a crucial element of this stage because: it reduces risk; the outcomes of adopting positive environmental practices may be slow; and common levels of knowledge help build

relationships between participants (critical in later stages). Developing these skills requires information, time, social support and inspiration (motivation). Early in this stage growers may seek a range of solutions and want information free of judgement. Group networks can support this stage by providing options and helping individuals to filter solutions whilst minimising disruption to their current farming set-up and associated stress. The degree and rate of progress depends on the complexity, compatibility and reversibility of the practice. Goal setting and visioning exercises (farm planning) now have relevance to the grower to enhancing sustaining practice change. Trialling is a cheap means of gaining information and confidence through risk sharing, especially if discussed in a group context.

Farm practice change stage: This stage looks at taking the trial and adopting the practice across the farm. Some important points to consider at this stage are that: wide scale adoption will often lead to new questions about the technology, so if not answered effectively, the practice may be abandoned and the previous investment is lost; peer recognition, personal support and encouragement is needed to maintain commitment especially if results are below expectation or slower than expected; and non adoption at the time is legitimate.

Benchmarking

The Australian banana industry is somewhat isolated from the global banana industry. As a first world country, Australia's production practices are very different from the major banana producing countries throughout the world. However, there is an opportunity to benchmark Australian production systems against other countries, to learn from other countries and adapt or modify existing technology for Australian conditions.

Taking this to the next step, there is an opportunity for Australian banana businesses to maximize profitability by driving cost out of the supply chain, and at the same time, maximising product quality and utilizing environmentally sound practices. One way to identify areas for improvement throughout the supply chain is to compare the performance of individual businesses or individual supply chains.

These two opportunities relate to benchmarking in different ways. First, there is a need to establish benchmarks of performance to act as targets for growers and other businesses to attain and improve upon. Second, once benchmarks have been established, benchmarking can provide the basis for continuous comparison among businesses with common models and aspirations. The former can be undertaken as a one-off project; however the latter requires a formalised and ongoing process that may be beyond the capacity of the industry to support.

Recommendation: Foundation projects should be supported to i) compare the Australian banana industry's performance to other banana producing nations so as to establish a benchmark of performance, and ii) identify benchmarks of best practice along the supply chain that may act as the basis for an ongoing comparative benchmarking process. A feasibility study of establishing such a process should be embedded into the project aims of the second project.

Benchmarking schemes have been introduced and failed across a wide range of industries for wont of professional coordination, including processes to maximise motivation and participation. Effective benchmarking processes usually don't stop at comparing data and results between businesses, but involve the range of activities associated with effective extension, including the identification of follow-up actions by both businesses (i.e. trialing new practices) and researchers (i.e. filling research gaps identified commonly across businesses). For this reason, if a feasibility study for the introduction of benchmarking process is favourable, the process should be closely integrated with the coordinated industry extension initiative.

Value chain development through relationship building and collaborative and participatory research

The health of any one part of the value chain can affect the health of any other part. The Australian Banana Industry Strategic Plan 2009-2014 highlights the need for greater involvement of the value chain in industry activities to lift the profitability of all sectors of the industry as well as raise the industry's profile (including its health, environmental and food safety attributes) through constant and consistent messages from multiple directions.

While the notion of extension is often applied to growers, it is equally important to other sectors of the value chain. The extension methods, however, may be different to those for growers, recognising commercial sensitivities, corporate structures, staff turnover, unique technologies and practices and so forth. That said, just as different growers learn differently and choose to engage with industry activities differently, so do different companies.

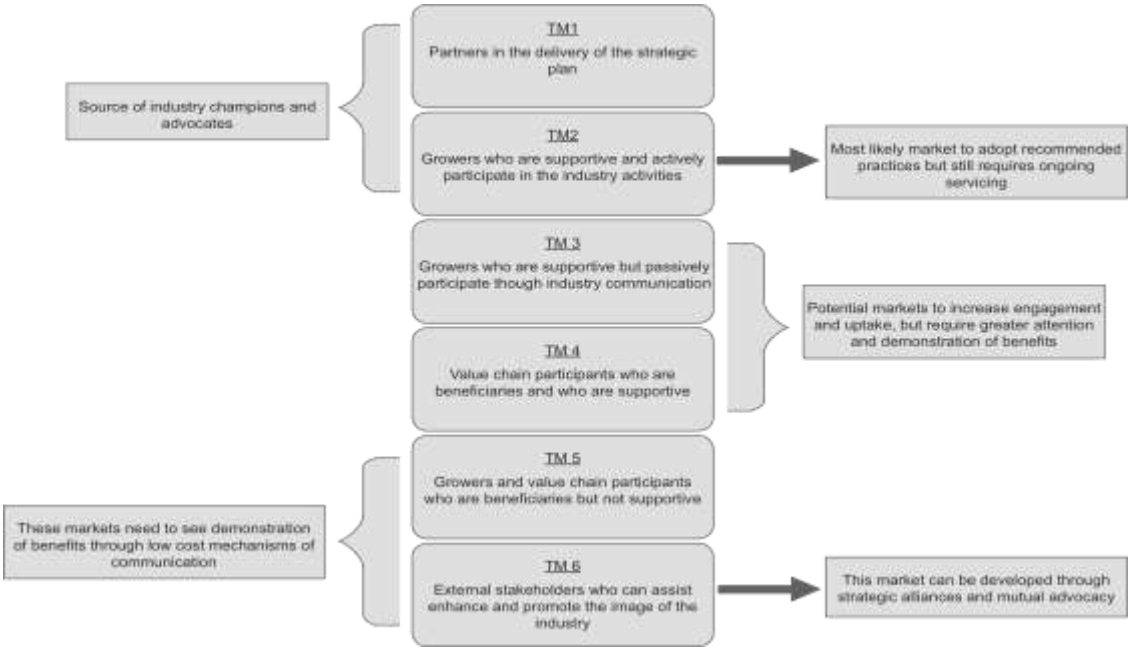
Because of the integral nature of value chain activities in the strategic plan, it will be essential for the industry to build a strong relationship with value chain partners, establishing trust and mutual understanding. Co-investment in industry projects should not be seen as the driver of relationship building, but rather as just one of many ways of interacting. Maximising the opportunities to rub shoulders, discuss issues and make joint decisions are important strategies to build trust and appreciation of the benefits that can be gained by working together. This is a prerequisite to effective collaboration and co-investment.

Recommendation: A coordinated approach to value chain engagement should be adopted. The Australian Banana Industry should appoint a part time coordinator to develop and implement a value chain extension strategy, facilitate value chain relationship building, oversee the range of value chain projects highlighted in the strategic plan, and organise regular forums for value chain interaction. The cost of the coordinator can be attributed to individual project budgets in an aggregated value chain portfolio of activity.

Informed decision making through targeted communication

Communication is pivotal to relationship building, ensuring accountability, receiving stakeholder messages and providing information to make timely and effective decisions across the industry. Done well, it is a two way process and also recognises different target audiences prefer different ways of being engaged, informed and heard. The action plan supplementing the Australian Banana Industry Strategic Plan 2009-2014 identifies six preliminary target audiences associated with the maximising participation in the implementation of the plan (Figure Seven).

Figure Seven: Target markets for engaging with activities associated with the strategic plan



A similar approach is required to underpin an industry communication strategy to ensure that the primary emphasis is on effective receipt and delivery of messages rather than on production of communication materials as ends-in-themselves.

Recommendation: A comprehensive communication plan should be prepared for the Australian Banana Industry as a matter of urgency to support the implementation of activities outlined in the strategic plan and to enhance the two way engagement of industry stakeholders in industry issues, and better inform decision-making across industry sectors. The plan should segment industry target audiences and align key messages and communication products most appropriate to each. Following preparation of the plan, the ABGC should be supported to coordinate the implementation of the plan. No less than 10% of the industry's R&D budget should be dedicated to communication annually.

Securing the future through scholarships and professional development

Like many rural industries, the Australian Banana Industry faces a range of issues that cannot be resolved through technical means alone. Policy development and advocacy, collaboration and communication with partners, stakeholders and community groups, and preparedness for risks to natural disasters all require substantial commitment of time and effort by people who are skilled or are willing to become skilled in these areas. This requires fundamental investment in the long-term development and nurturing of human capital. The aging population of the industry demands that the young, and young at heart, be encouraged to contribute to the welfare of the industry.

Even where the technical support base is concerned, similar challenges are faced with too few young people attracted to the agricultural research profession. Technical issues, particularly in relation to maintaining the biological integrity of bananas and the productive and environmental integrity of banana farming systems, won't go away even beyond the life of this strategic plan, and so scientific and advisory services will always be essential to the industry's survival, let alone its growth.

Recommendation: The industry should establish a research scholarship scheme to attract students to study issues of importance to the industry both now and likely to remain so into the future. A minimum of two scholarships should be supported in any one year at either the Masters or Doctoral level. Students should also be engaged in industry activities at minimal to no cost to broaden their professional development and their learning context.

Leadership is important at every level of the industry: on farms; in industry bodies; and in the scientific, advisory and other support organisations that service the industry and its members. Making effective decisions on behalf of investors and levy payers can be a demanding and thankless task, but the rewards for good decisions benefit the entire industry and quite often the wider community. Ensuring governance structures are right, fresh energy is injected

from time to time and decisions can be made with confidence that there is long-term stability in their implementation requires an investment in the business capacity of both current and future leaders.

Recommendation: The industry should support governance training for members appointed to industry representative positions. Other forms of professional development should be considered for these representatives and other industry members, including succession training and study tours (being careful not to duplicate activities supported through the national extension strategy.

Diversified regional development to strengthen continuity of supply

The Australian banana industry is based around three production regions across Australia. Prior to disease outbreak in the Northern Territory which wiped out its entire banana industry, the industry had four regions from which it could source bananas and ensure continuity of supply.

The locations in which bananas are grown are susceptible to a range of natural hazards, including wind and floods, largely although not exclusively associated with cyclones. This has made the continuity of the supply of one of Australia's most popular fruits problematic, with associated price fluctuations proving frustrating to consumers.

Diversifying the regions in which bananas are grown has been identified in the industry's strategic plan as an important strategy to overcome supply difficulties. Extending into new regions, however, has implications not only for physical support factors (land, water, transport, infrastructure etcetera), but also for social factors (skills, labour, community etcetera). For this reason, the industry supports the inclusion of a diversification strategy in the context of this Industry Development Needs Assessment.

While short-term access to skills and labour will be important to establish a banana industry in any new region, there will be an ongoing call for the industry to support new growers and employees long into the future.

Recommendation: The industry should explore the potential to diversify the regions within which bananas are produced so as to strengthen the industry's resilience to the range of natural hazards that confront it. The criteria for selecting new regions should include capacity issues including access to skills and labour, in addition to other factors such as land suitability, resource access and infrastructure capacity.

Details of the each strategy are outlined in the tables following. These tables are based on Tools E and F of HAL's Guidelines and Tools for Industry Development Needs Assessment Process.

Grower development through smart extension: Activity Schedule (Tool E)

Brief Description	Intended Outcomes	Start	Finish	Budget	Manager
Development and implementation of a coordinated National Australian Banana Extension Strategy. The Strategy will involve • Designing a comprehensive Extension Strategy for the industry. The Strategy should include separate activities aimed for achieving awareness, participation and adoption targets. • Recommending specifications for extension projects that meet the outcomes set for the Strategy, and assisting the IAC and HAL seek and assess proposals • Implementation of extension projects as per the Strategy • Linking industry extension practicioners through engagement with one another to ensure synergies between projects • Undertaking an initial benchmark of industry performance against international production systems. • Undertaking a feasibility study of developing an ongoing benchmarking scheme incorporated into the Extension Strategy • Ensuring that feedback from Strategy activities informs other communication and R&D investments of the strategic plan • Monitoring and evaluating the achievement of extension activities and making recommendations to the IAC and HAL in respect to future improvements.	The two outcomes identified in the strategic plan for a program of this kind include: • Increase in Australian production efficiency equating to a 5% increase in profit per kg per year • At least 80% of Australians support the Australian banana industry and recognise its environmental integrity (indirect outcome) Investment in this area will also help growers participate in building the market and delivering to consumer expectations.	1 July 2009	30 June 2014	Coordinator: $60,000 (2009-10) $70,000 pa in following years Extension activity: $80,000pa (to be varied if necessary on an annual basis)	Co-ordinator out-sourced and reporting regularly to the IAC / HAL / ABGC under HAL contract.

Grower development through smart extension: Action Plan (Tool F)

Outcome required

Increase production efficiency by 5% by 2014 with minimal to no environmental impact

Strategic plan link

Objective 2: Increase production efficiency by 5% by 2014 with minimal to no environmental impact
Strategy 2.1: Improve Australian banana production and supply systems and quality through innovation and benchmarking
Strategy 2.4: Safeguard the environment and society through improving the environmental integrity of Australian banana production

Federal rural R&D priorities	Public or spill-over benefit
Productivity and adding value Natural Resource Management Climate variability and climate change	Profits from increased productivity benefits flowing through to regional communities. Improved environmental condition across sensitive coastal catchments, particularly those adjacent to reefs, as growers improve their resource management and adapt to new challenges (ie climate change).

Current activity and comment

Extension is relatively ad-hoc, tied to individual projects rather than collective programs of projects. Benchmarking is undertaken in some banana growing regions to a limited extent. It does not include international comparisons, nor is linked to feedback loops in the R&D process. Linking extension and benchmarking to sound learning principles outlined in this IDNA would enhance the return on investment by tailoring extension to the needs of individual growers.

Funding options

Hal R&D levy

Contributions from State agencies with an extension mandate

Action	By When	Responsibility
Plan: • Coordinate the development of a comprehensive extension strategy	Feb 2010	ABGC, IAC, HAL, extension coordinator
Benchmark: • Undertake an international comparative study of performance to establish benchmarks • Undertake a feasibility study of introducing an ongoing benchmarking / QA system (or abandon if not feasible) • Implement the benchmarking process, including coordination of a centralised database, distribution of the information, and discussion about the results (if deemed feasible) • Use the benchmarking process to inform the IAC about R&D gaps	Ongoing from July 2010	ABGC, IAC, HAL, extension coordinator

Action cont . . .	By When	Responsibility
Enhance adoption: • Implement the range of extension activities specifically targeted towards enhancing awareness, trialling and adoption of best practice.	Ongoing from July 2010	ABGC, IAC, HAL, program coordinator
Coordinate: • Appoint a national coordinator to drive the extension strategy[#]. • Regularly evaluate and review the effectiveness of the program. • Negotiate co-investment in program activities.	Ongoing from 1 March 2010	ABGC, program coordinator

[#] This approach will require considerable discussion with State agencies, and an alternative, team-based, approach may be preferred.

Value chain development through relationship building and collaborative and participatory research: Activity Schedule (Tool E)

Brief Description	Intended Outcomes	Start	Finish	Budget	Manager

Development and implementation of a value chain relationship strategy, including development, implementation and communication of projects covering:
• Banana industry supply chain analysis
  ○ developing recommendations for a supply chain improvement program.
• Alternative banana distribution channels
  ○ developing recommendations for commercial adoption
• Improved banana packaging
  ○ working with commercial packaging suppliers and transport industry
• Utilisation of bananas not suitable for retail markets
  ○ working with innovative R&D food companies
• Linking the strategy's project leaders through engagement with one another to ensure synergies between projects.
• Monitoring and evaluating the achievement of the program's activities and making recommendations to the IAC and HAL in respect to future improvements.
(While these projects may be undertaken as individual R&D projects, a coordinated approach to value chain extension and communication is desirable, and hence is included a part of this Industry Development Assessment).
	The three outcomes identified in the strategic plan for a program of this kind include:
	• Year-on-year increase in Australian banana consumption as evidenced in sales surveys
	• Year-on-year increase in customer satisfaction with Australian bananas as evidenced in consumer surveys
	• Market research shows at least 80% of consumers are satisfied with the product range of Australian bananas (fresh and processed)
		1 July 2009	30 June 2014	Supply chain study:
				$150,000 (09/10)
				
				Alternative distribution study:
				$150,000 (09/10)
				
				Packaging study:
				$75,000 (09/10)
				
				Utilisation study:
				$90,000 (09/10)
				
				Coordination:
				$50,000pa (09-14)
					Co-ordinator out-sourced and reporting regularly to the ABGC and IAC under HAL contract.

Value chain development through relationship building and collaborative and participatory research: Action Plan (Tool F)

Outcome required

15% increase in consumption of Australian bananas over the life of the strategic plan at profitable wholesale prices

Increase production efficiency equating to a 5% increase in profit per kg/yr with minimal to no environmental impact

Strategic plan link

Objective 1: 15% increase in consumption of Australian bananas over the life of the strategic plan at profitable wholesale prices
Objective 2: Increase production efficiency equating to a 5% increase in profit per kg/yr with minimal to no environmental impact
Strategy 1.2: Satisfy our customers by understanding their needs and specifically delivering to their requirements
Strategy 1.3: Diversify the range of products and eating occasions for Australian bananas through product development, value adding and placement to increase consumption
Strategy 2.1: Improve banana production and supply systems and quality through innovation and benchmarking

Federal rural R&D priorities	Public or spill-over benefit
Productivity and adding value	Profits from increased productivity benefits flowing through to regional communities. Improved product quality, safety and environmental integrity

Current activity and comment

The Australian Banana Industry has some, albeit limited activity with value chain partners. The new strategic plan aims to increase the level of collaboration exponentially, although this requires considerable attention not only to co-investment activity, but longer-term relationship building and communication.

Funding options

Hal R&D levy

Contributions from value chain partners

Action	By When	Responsibility
Plan: • Coordinate the development of a cohesive value chain relationship strategy, including an approach to facilitating value chain participation in projects and communication of project results to the value chain	Dec 2010	ABGC, IAC, HAL
Baseline projects: • Banana industry supply chain analysis • Comparative supply chain performance	Commence support from June 2009	ABGC, IAC, HAL, program coordinator

Action cont . . .	By When	Responsibility
Strategic projects: • Alternative banana distribution channels • Improved banana packaging • Utilisation of bananas not suitable for retail markets	Commence support from June 2009	ABGC, IAC, HAL, program coordinator
Enhance adoption: • Implement the range of value chain extension activities specifically targeted towards enhancing awareness, trialling and adoption of best practice	Ongoing from January 2010	ABGC, IAC, HAL, program coordinator
Coordinate: • Appoint a part time value chain coordinator to oversee value chain projects and coordinate in industry development activities at the post-farm-gate level. • Regularly evaluate and review the effectiveness of the program. • Negotiate co-investment in program activities.	Ongoing from January 2010	ABGC, program coordinator

Informed decision making through targeted communication: Activity Schedule (Tool E)

Brief Description	Intended Outcomes	Start	Finish	Budget	Manager
Development and implementation of a comprehensive industry communication program based around the target audiences identified in the strategic plan. The Program will involve • Designing a comprehensive communication plan for the industry, including media, publications, relationship building, event management, reporting and accountability and public relations. • Specific actions that support the Extension Strategy targets for awareness and participation. • Recommending specifications for projects that meet the outcomes set for the program, and assisting the IAC and HAL seek and assess proposals. • Supporting project leaders undertake their project's communication activities, including assisting in cross-project communication. • Monitoring and evaluating the achievements of the communication program and making recommendations to the IAC and HAL in respect to future improvements.	The three outcomes identified in the strategic plan for a program of this kind include: • At least 80% of industry and stakeholder survey respondents are satisfied with industry communication • At least 80% of Australians support the Australian banana industry and recognise its environmental integrity • At least 80% of industry stakeholders recognise the ABGC as providing effective leadership by / from 2010-11	1 July 2009	30 June 2014	Communication: $200,000 (09/10) $300,000pa (2010-14)	ABGC in partnership with HAL

[a] M&E = Monitoring and Evaluation

Informed decision making through targeted communication: Action Plan (Tool F)

<table>
<tr><td colspan="3">Outcome required
Improve two-way communication & knowledge transfer to underpin better industry decisions and improve stakeholder confidence in the industry</td></tr>
<tr><td colspan="3">Strategic plan link
Objective 3: Ensure a 3:1 return on investment of industry levies by enhancing the industry's leadership, capacity and influence
Strategy 3.2: Improve two-way communication & knowledge transfer to underpin better industry decisions and improve stakeholder confidence in the industry</td></tr>
<tr><td colspan="2">Federal rural R&D priorities
Communication cuts across all R&D priorities</td><td>Public or spill-over benefit
Enhanced return on the public’s investment in the banana industry via the R&D levy matching arrangement.
Enhanced sense of public satisfaction with the banana industry’s contribution to safeguarding the environment and regional communities</td></tr>
<tr><td colspan="3">Current activity and comment
The Australian banana industry invests significantly in communication medium. Much of this communication is generic, and not explicitly targeted to well defined markets for specified outcomes. The new strategic plan provides an opportunity to tailor communication activities to outcomes specified in the plan.</td></tr>
<tr><td colspan="3">Funding options
Hal R&D levy
Contributions from value chain and other industry partners</td></tr>
<tr><th>Action</th><th>By When</th><th>Responsibility</th></tr>
<tr><td>Plan:
• Develop a coordinated comprehensive communication strategy aimed at the target markets identified in the strategic plan</td><td>December 2009</td><td>ABGC, IAC, HAL</td></tr>
<tr><td>Stimulate change:
• Collect and communicate to industry members improved information on production and markets, including forecasts, to underpin production, product development and distribution decisions
• Provide support for the communication activities of the other programs outlined in this Needs Assessment.
• Coordinate the preparation, publication and distribution of material, tailoring key messages for specific target audiences.</td><td>Ongoing from January 2010</td><td>ABGC, IAC, HAL</td></tr>
</table>

Action cont . . .	By When	Responsibility
Build support: • Provide forums for regular value-chain interaction to ensure effective relationships between sectors that enhance cooperation, co-investment and industry efficiency • Document industry contributions to regional economies and industry environmental performance to underpin stakeholder communication • Participate in community processes such as catchment management	Ongoing from January 2010	ABGC, IAC, HAL
Coordinate: • Contract the ABGC to drive the strategy. • Regularly evaluate and review the effectiveness of the communications strategy. • Provide feedback to the research program on future priorities.	Ongoing from 1 July 2009	ABGC

Securing the future through scholarships and professional development: Activity Schedule (Tool E)

Brief Description	Intended Outcomes	Start	Finish	Budget	Manager
Industry structures, governance and professional development • Develop leadership and governance skills of current leaders to enhance the effectiveness of industry structures • Provide support for specific professional development activities (determined annually) (i.e. Produce Market Assoc training, executive training, Nuffield scholarships etc)	At least 80% of industry stakeholders recognise the ABGC as providing effective leadership by / from 2010-11	1 July 2009	30 June 2014	Governance: $25,000 (09/10) Professional development: $35,000pa (2010-14)	ABGC
Leadership and succession • Develop a succession plan across ABGC, and facilitate succession planning at regional and enterprise level, to ensure the industry has a strong pool of long-term potential leadership talent at every level	Long-term leadership capacity at every level of the industry	1 July 2009	30 June 2014	Succession training: $75,000 (09/10)	ABGC
Scholarship scheme for industry research and service support • Attract young researchers and extension support into the industry to ensure the long-term capacity to address the technical, social and economic issues that will continue to confront the industry	Long-term research and service capacity	1 July 2009	30 June 2014	Scholarships (stipend = $25k per student per year: $25,000 (09/10) $50,000 (10/11) $75,000 (11/12) $75,000 (12/13) $75,000 (13/14)	ABGC / HAL

Securing the future through scholarships and professional development: Action Plan (Tool F)

Outcome required

Ensure a 3:1 return on investment of industry levies by enhancing the industry's leadership, capacity and influence

Strategic plan link

Strategy 3.1: Strengthen current and future industry leadership and capacity to ensure long-term sound stewardship of the Australian banana industry

Federal rural R&D priorities	Public or spill-over benefit
Cuts across all R&D priorities Innovation skills	Contribution of the Australian banana industry to the Australian and regional economies.

Current activity and comment

The institutional and management arrangements for the Australian Banana Industry have undergone significant transformation in recent years with the introduction of the levy. This now requires higher levels of performance and accountability. Like many agricultural industries, however, the long-term capacity to lead and support the industry has been limited by age demographics and career opportunities. These issues are critical for the industry to address, including in collaboration with other horticultural and agricultural industries.

Funding options

Hal R&D levy
Contributions from value chain and other industry partners

Action	By When	Responsibility
Plan: • Develop an integrated industry capacity plan which includes; professional development, strategic alliances, and effective and well resourced levy program	December 2009	ABGC, IAC, HAL
Train and develop: • Provide training programs on **governance and accountability** • Provide training programs on **succession planning at every level** • Support leadership programs to identify and foster new industry leaders for the long-term. • Provide scholarships to attract the next generation of researchers and service providers into the industry	Ongoing from August 2009	ABGC, IAC, HAL
Influence: • Develop and advocate industry policy positions on issues that impact the banana industry and its surrounding communities	Ongoing from January 2010	ABGC, IAC, HAL

Action cont . . .	By When	Responsibility
Support: • Negotiate and implement a sufficiently resourced and effective partnership agreement with HAL to support the levy program. • Ensure industry advisory committees have the appropriate skills, experience, and diversity. • Establish and implement a monitoring and evaluation strategy to measure progress against the strategic plan.	Ongoing from 1 July 2009	ABGC

Diversified regional development to strengthen continuity of supply: Activity Schedule (Tool E)

Brief Description	Intended Outcomes	Start	Finish	Budget	Manager
Diversifying the regions within which bananas are grown through systematic feasibility studies and regional capacity development, including: • Outlining the criteria for selecting alternative growing regions • Applying the criteria to regional studies to identify preliminary alternative regions • Benchmarking the preliminary alternative regions to existing regions to identify regions for intensive pilot trials • Support pilot trial plots in preferred alternative regions • Prepare a business case for government and industry support for regional development, including consideration of the capacity building issues required for the effective establishment of the banana industry in any new region. • Negotiate government and industry support by completion of the 5 year strategic plan (completion June 2014).	The outcomes identified in the strategic plan for a program of this kind includes: • Enhanced regional resilience to natural disasters by increasing the diversity of regions where bananas are grown and exploring the use of alternative production systems	1 July 2009	30 June 2014	Regional study and benchmarking $100,000 (2009-10) Plot trials: $80,000 (2010-11) $60,000 (2011-12) $$60,000 (2012-13) Business case preparation $50,000 (2012-13) Government and industry negotiation $50,000 (2013-14)	IAC / HAL / ABGC

Diversified regional development to strengthen continuity of supply: Action Plan (Tool F)

Outcome required Enhanced regional resilience to natural disasters by increasing the diversity of regions where bananas are grown and exploring the use of alternative production systems		
Strategic plan link Objective 3: Ensure a positive return on investment of industry levies by enhancing the industry's leadership, capacity and influence Strategy 3.3: Develop effective risk management capability to enhance industry resilience and response to a range of potential emergencies		
Federal rural R&D priorities Productivity and adding value Climate variability and climate change	**Public or spill-over benefit** Long-term continuity of supply, ensuring consumers with good product at less variable price	
Current activity and comment The banana industry has previously operated in more than the three main growing regions, but the plants' susceptibility to disease has reduced this to three. Issues such as Cyclone Larry have absorbed the total capacity of the industry to respond more strategically until he current strategic plan. Some private companies have considered industry expansion and the investment proposed here will build and support this effort.		
Funding options Hal R&D levy Contributions from State agencies with an interest in regional development.		
Action	**By When**	**Responsibility**
Plan: • Outline the criteria for selecting alternative growing regions	October 2009	ABGC, IAC, HAL
Preliminary selection: • Apply criteria to to identify preliminary alternative regions • Benchmark the preliminary alternative regions to existing regions to identify regions for intensive pilot trials	June 2010	ABGC, IAC, HAL
Trial: • Support pilot trial plots in preferred alternative regions	June 2010 - June 2013	ABGC, IAC, HAL
Business case: • Prepare a business case for government and industry support for regional development, including consideration of the capacity building issues required for the effective establishment of the banana industry in any new region. • Negotiate government and industry support by completion of the 5 year strategic plan (completion June 2014).	Business case by Dec 2013 and negotiation between Jan – June 2014	ABGC, IAC, HAL

Our Vision

Australian Bananas are the first choice snack food for all Australians