

Australian Banana Industry

Strategic Investment
Plan



Horticulture Australia

2014/15 – 2018/19

May 2014

Key abbreviations used in this document

ABC: Analytical Business Case

ABGC: Australian Banana Growers' Council

HAL: Horticulture Australia Limited

IAC: Industry Advisory Committee

R&D: Research and Development

RD&E: Research, Development and Extension

ROI: Return on Investment

SIP: Strategic Investment Plan

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Overview of the Strategic Investment Plan

Strategic Intent

Australian Bananas are first choice for Australian consumers and remain number one in the fresh produce category!

Key Aspirations

The Australian banana industry aspires to be a sustainable sector supported by profitable production and supply chain businesses that consistently deliver a valued and quality product to the consumer. By doing so, bananas maintain their lead position in the produce category.

It aims to achieve this through continued investment in research & development, managing biosecurity, developing efficient and effective production systems and supply chains, better understanding the consumer and driving demand through effective marketing and promotion.

Objectives and strategies

Objective 1:	Objective 2:	Objective 3:
Maintain a consistent and quality supply of Australian bananas whilst achieving a 5% productivity gain¹ by 2018/19 by: <ul style="list-style-type: none">– Improving production per unit of input; and / or– Reducing production and supply costs per unit of marketed product	Increase demand for Australian bananas by: <ul style="list-style-type: none">– Increasing the value of the banana category by \$10.2M per annum– Maintaining banana's #1 fruit status²	Improve industry capacity and R&D adoption; and demonstrate benefit of levy investments by: <ul style="list-style-type: none">– Engaging > 50% of production acreage in the technical update series³– Increasing participation in Banana BMP to >50% of production area and continuously increasing adoption of best management practice across the industry– Achieving an ROI of banana industry R&D levy funds of 4.1:1 over the life of the Plan
1.1 Continuously improve the effectiveness and efficiency of banana production systems	2.1 Gain greater insight into consumer preferences and behaviour, and monitor market performance	3.1 Promote adoption of appropriate R&D and facilitate other industry development activities
1.2 Improve packhouse and supply chain efficiency and practices	2.2 Optimise the positioning of Australian bananas in existing & emerging domestic market channels	3.2 Continue to build industry skills and develop appropriate structures and resources to meet industry needs
1.3 Implement appropriate biosecurity management strategies and information systems to facilitate supply	2.3 Maintain confidence in the Australian banana industry by proactively managing product issues	3.3 Ensure the industry has appropriate processes, resources and risk management strategies to function effectively

Details of the Banana Industry Strategic Investment Plan objectives and strategies are provided in the following pages.

¹ Measured through production enterprise benchmarking

² This objective will be reviewed in June 2015 when new three-year Marketing Plan is developed. The intent is to align the objectives related to product demand within the Strategic Investment Plan with the objectives of the three-year Marketing Plan.

³ As part of the Banana Extension Project

Scope of the Plan

The Australian Banana Industry Strategic Investment Plan has been developed in consultation with the Banana Industry Advisory Committee (IAC). Its purpose is to provide strategic direction for the investment of banana industry levies over the period 2014/15 – 2018/19.

The Plan outlines the key objectives and strategies to be employed to achieve the required outcomes from investment.

Over the 5-year life of this Plan it is expected that approximately A\$35 million⁴ will be invested by Horticulture Australia (HAL) into industry research and development (R&D) and marketing & promotion on behalf of the Australian banana industry. This investment will consist of a mix of levy funds, voluntary contributions and matched funding from the Australian Government.

One of the key roles of this document is to demonstrate to levy payers that their money will be invested in the most effective way to achieve the stated aims of the Plan. Likewise the Australian Government can be assured that the public monies of industry levies and Australian Government matching funds are being allocated appropriately and are addressing the Government's research and development priorities. Importantly, this document can also assist in guiding investment from other stakeholders and provides a context for R&D that might be funded outside of the industry levy/HAL process.

The plan focuses on the industry's position and strategic needs within three key priority areas:

1. Supply – production and productivity
2. Demand – market development and promotion
3. Industry capacity development – R&D extension, industry communication, management, resourcing and governance.

The success of strategies employed in these areas will be measured by impact on industry using a range of indicators outlined in the Plan.

The Plan also addresses the Australian Government's Rural Research and Development priorities of:

- Boosting productivity and adding value to rural production
- Effective operation of supply chains and markets for existing and new products
- Supporting effective natural resource management
- Building resilience to climate variability and climate change
- Protecting Australia from biosecurity threats.

To meet these challenges and support the research effort, continued investment must also be made in:

- Building skills to undertake research; and apply its findings
- Promotion of new and existing technologies to address the Government's R&D priorities.

Structure of the Plan

The Plan has been written as the overarching document to guide industry direction and investment. There are a number of subordinate plans that accompany this Plan and support the implementation and evaluation process. These subordinate plans include:

- R&D Operational Plan (working document for the Industry Advisory Committee)
- Strategic Marketing Plan (Banana Industry Strategic Marketing Plan 2012 -2015)
- Industry Communications Plan (developed by the Australian Banana Growers' Council (ABGC)).

⁴ R&D: A\$ 17.4 million and Marketing & Promotion: A\$18.2 million expenditure over 5 years (see page 15 for details).

Developing the Plan

The following process was adopted to develop the Plan:

Approach and Planning

The Banana Industry Advisory Committee (IAC) met in May 2013 to discuss and agree the planning process for developing the Plan.

Industry Consultation

As part of the consultation with industry a number of activities were undertaken:

- Strategic planning workshops were held in North Queensland and New South Wales during September 2013. Key industry stakeholders, including growers, researchers and wholesalers were invited to attend. Participants were encouraged to comment on issues affecting the industry, future opportunities and threats, and how levies might be invested to support profitable industry growth and sustainability.
- A document outlining the current state of the Australian banana industry (updated May 2014) was developed (see Appendix 1).
- Additional interviews were conducted by the consultant with a number of growers, wholesalers and retailers.
- A written survey, distributed with *Australian Bananas* magazine, also provided the opportunity for comment on industry issues, R&D needs and possible approaches to addressing issues. The survey responses were considered as part of the Plan development.

Draft Plan development and industry review

- Following the consultation process a draft SIP and R&D Operational Plan was developed and reviewed by the IAC. Amendments were made as necessary.
- The draft SIP was then made available to the broader industry and stakeholders were asked to provide comment over December 2013 / January 2014. Comments and feedback were taken on board and amendments made as necessary.
- An updated SIP R&D Operational Plan was developed for consideration by the IAC and

ABGC. Following this the investment analysis was developed in collaboration with the IAC and finally proposed investment was allocated against Australian Government's Rural R&D priorities.

Plan endorsement

The final Plan has been endorsed by the Banana IAC (May 2014) and is to be reviewed and endorsed by the HAL Board.

Implementing and reviewing the Plan

The implementation of the Plan (and subordinate plans) will be managed by HAL with the support of the Banana IAC and Australian Banana Growers' Council (ABGC). It will inform the development of Annual Investment Plans.

The Plan will be reviewed at least annually by HAL, the Banana IAC and ABGC to ensure that investment continues to remain targeted and delivers priority outcomes for the industry.

It should be noted that at the time of completion of the SIP (May 2014), there are a number of program reviews and other factors which may affect the investment mix within the SIP. These include: outcomes of the mid-program review of the Banana Plant Protection Program (expected late 2014); outcomes of the mid-program review of the Banana Bunchy Top Program (expected late 2014); outcomes of the review of the 2012 – 2015 Marketing Plan (expected late 2014); regulations associated with new biosecurity legislation in Queensland; and outcomes of the HAL Review and impact on overall levy availability (expected late 2014). ***It is highly recommended that the Banana IAC undertake a comprehensive review of investment within the SIP, when the outcomes and impacts of these reviews are known.***

Major impacts on the industry and its performance

As part of the consultation process with industry, the following conditions and attributes were seen as drivers or constraints on development of the industry.

Potential impacts on supply such as plant health and biosecurity issues are strongly identified as having the greatest constraint on future industry performance. Additionally there is recognition by the industry that a focus on meeting consumers' needs and expectations is critical for driving demand and increasing category value and business profitability.

Industry strengths	<ul style="list-style-type: none"> Bananas have the leading position (market share by value) in the fresh produce category Strong support for and recognition of the banana category at a retail level All-year-round supply Subtropical marketing plan and supply chain directory in place Continued investment by businesses in new technologies and systems to achieve productivity gains Improving geographic spread of production – to mitigate impact of extreme weather events Industry levy (R&D and marketing) and the Australian Government's matching dollar support for R&D Committed researchers and service providers A track record of instigating and delivering strong R&D and marketing programs which have demonstrated beneficial impacts: <ul style="list-style-type: none"> Strong plant health program and varietal screening program in place Strong biosecurity program in place Effective environmental management programs in place Strong communication program in place Strong representative body to support industry development and advocacy 	Industry weaknesses
	<ul style="list-style-type: none"> Heavy reliance on one variety - lack of category diversification limits ability to increase category value Heavy reliance on one variety - results in vulnerability particularly in relation to disease threats (Panama TR4) Supply chain challenges affect product quality - devaluing the category Waste at production level (mismatch of supply and demand) and shrinkage along the supply chain and at retail continue to be a challenge Although improving geographic spread of production, there is still a high concentration of production in Far North Queensland Declining viability of SEQ / NSW production and subsequent decline in grower numbers and volume Aging demographic of NSW growers Representative model in NSW is failing (because of decline in commercial grower numbers) and affecting industry ability to respond to critical events (e.g. disaster management needs following ex-Tropical Cyclone Oswald) Limited industry data (production / supply chain) on which to make informed investment decisions Lack of knowledge at consumer level about varieties other than Cavendish and their attributes e.g. Lady Finger Reduction in research resources (people) – limited next generation of researchers through traditional R&D channels 	

Major impacts on the industry and its performance (continued)

Industry opportunities	<ul style="list-style-type: none"> • Growing demand for healthy foods / snacking options • Gaining better consumer insights, understanding the purchase drivers and tailoring the product offering • Access to new technologies to increase business productivity e.g. mechanisation / robotics at field and packhouse levels • Access to new varieties to address need for increased productivity (production capacity, disease tolerance / resistance, plant size, suitable for production in drier climate) and consumer requirements • Opportunities to increase demand through continued effective marketing and promotion • Better leveraging of international research and research funding to support the Australian industry • Opportunities to develop new business models / alternate supply chains to further support niche local markets for NSW and SEQ growers • Export market opportunities - potentially small market for premium (organic?) bananas from Australia – in response to growing demand premium, safe foods. 	Industry threats
	<ul style="list-style-type: none"> • Weather impacts / cyclones • Biosecurity risks / imported fruit • Access to appropriate pest and disease management technologies (withdrawal or ineffectiveness of current plant protection products) • Increasing cost structures within industry • Access to and cost of labour • Access to and cost of inputs, including packaging, chemical, fertilizer and transport • Cost of water (WA) • Increased competition from other fruit categories throughout year e.g. mandarins and imported US stonefruit during the winter • Impact of urbanisation particularly in NSW and SEQ (changing land use patterns) • Limited options for management of vertebrate pests (flying foxes) • Food safety issues / increased need for traceability • Increasing pressure and potentially unexpected demand from the supply chain to meet 'environmental / ethical / social' standards • Social media threat in relation to poor industry performance (real or perceived) • Government policy / regulatory environment particularly in relation to R&D funding, biosecurity, water, labour, workplace health and safety, chemical regulation, land usage etc. • Increased competition in retail and amongst retailers 	

The Strategic Investment Plan details

On the following pages the details of the Objectives, Strategies and Sub-strategies of the Plan are provided.

Objective 1: Maintain a consistent and quality supply of Australian bananas whilst achieving a 5% productivity gain⁵ by 2018/19 by:

- Improving production per unit of input; and / or
- Reducing production and supply costs per unit of marketed product

Investment Rationale

There is a need for ongoing productivity gains at production and supply chain levels to improve industry competitiveness and drive business profitability.

It is essential that Australian banana growers and supply chain partners continuously seek to improve efficiency of production and marketing systems to improve business performance, with an aim to achieving an internationally competitive position for Australian bananas in the domestic market. Although current biosecurity restrictions do not permit importation of fresh bananas, it is imperative to maintain a position that allows Australian bananas to compete on the domestic market, albeit with a different value offering, should imported product be allowed.

As the industry has the capacity to supply adequately, and often oversupply, the existing domestic market, the focus of productivity gains should be on reducing costs (without adverse impact on quality or the environment) at a level of supply which supports profitable and sustainable production - rather than increasing outputs (supply). However, there is also scope to improve productivity by diversifying the product offering and increasing the overall category value (see below).

Optimal production capacity, improved quality and related productivity gains can potentially be achieved through a range of measures such as adoption of: better pest, disease and nutrition management; improved varieties; improved production, harvesting and packing systems; increased use of mechanisation, robotics and sensing technologies; and access to improved production and market data to inform decision making.

There is a need to focus on delivering a product that meets consumers' needs and expectations

Although consumer research is an output of Objective 2 in this Plan (see pages 11 & 12), the market development response will likely be driven at the production and supply chain levels.

Quantifying consumer preferences and purchase drivers and responding to these will require the development and adoption of modified production and supply chain guidelines, standards and / or practices to support improved quality and the development of new products to build product demand and capture value.

Improved harvest and postharvest management is essential to ensure high quality product at retail level

Impacts on fruit quality through the supply chain continue to be a significant cost to the industry. Better harvest management and postharvest management systems are required to maintain value and reduce waste. There is a need to educate the supply chain continuously in best practice handling to ensure that product reaches the retail shelf in the optimal condition.

⁵ Measured through production enterprise benchmarking

Need for improved industry information

There are currently gaps in the industry production, supply chain and marketing data available to growers and other industry stakeholders. Lack of timely, relevant and robust data limits the ability of managers to make informed decisions relating to management activities at an enterprise level and potentially also stifles adoption of productivity measures. It also affects decision making at an industry level. It is important that the industry continues to develop or access relevant industry information to support business development.

Robust biosecurity settings are required to underpin supply and confidence in the industry

The integrity of the production system which serves to provide the sustainable and competitive supply of bananas needs to be underpinned by robust biosecurity mechanisms. The threat of exotic pest and disease incursions is particularly high for the Australian banana industry. This is due, in part, to the geographic proximity of the major Australian production region to PNG and South-east Asian countries that are known sources of a range of threats; and the concentration of production in far North Queensland, in particular the wet-tropics area.

Of particular concern to the Australian industry is Panama TR4. Although present in the Northern Territory, other production areas remain free of the disease. Cavendish bananas are particularly susceptible to the pathogen and currently there are no varieties with resistance to the disease that would be suitable replacements, either in Australia or internationally. Any incursion into major production areas in North Queensland could have catastrophic consequences for the industry.

The Australian banana industry has a strong track record in addressing biosecurity issues and needs to maintain its proactive approach to this issue. Any breach of biosecurity has the potential to affect not only the supply of Australian bananas, but also the livelihoods of growers, their workers, supply chain partners, local communities and their economies.

Objective 1: Maintain a consistent and quality supply of Australian bananas whilst achieving a 5% productivity gain⁶ by 2018/19 by:

- Improving production per unit of input; and / or
- Reducing production and supply costs per unit of marketed product

Strategies	1.1 Continuously improve the effectiveness and efficiency of banana production systems	1.2 Improve packhouse and supply chain efficiency and practices	1.3 Implement appropriate biosecurity management strategies and information systems to facilitate supply
Sub-strategies	<p>1.1.1 Ensure plant health and market access is maintained through R&D; appropriate pest and disease management protocols; access to current and new chemicals; and other technologies, systems and / or practices, particularly those that offer nil residue outcomes</p> <p>1.1.2 Continue to research and refine other agronomic practices including soil, nutrition, water and plant management that improve productivity, quality and environmental outcomes</p> <p>1.1.3 Support the development or introduction of new varieties that will provide productivity gains (e.g. disease resistance) and market advantage (improved consumer attributes)</p> <p>1.1.4 Investigate and support the development of new production management systems and technologies that have the ability to improve productivity, OH&S outcomes, product quality and environmental outcomes</p>	<p>1.2.1 Continue to improve harvest and postharvest knowledge and systems; and facilitate the introduction of new or improved practices and technologies (such as mechanisation, robotics and sensing technologies) that have the ability to maximise product quality (linked to consumer research 2.1.1), productivity and reduce shrinkage through the supply chain</p>	<p>1.3.1 Ensure an effective biosecurity system is in place, supporting a continued proactive approach to biosecurity issues, especially with regard to biosecurity awareness at field level and required research of pest & disease threats</p> <p>1.3.2 Continue to build on industry production benchmarking and supply chain data initiatives, ensuring that information provided to businesses (and industry) is relevant, timely and robust in order to support decision making</p>
Outcomes	<ul style="list-style-type: none"> • Appropriate management protocols and registrations in place to manage major pest and diseases cost effectively and maximise crop productivity • New varieties continue to be trialled and those with appropriate attributes are prioritised for commercial trials and released to industry as appropriate • Effective responses to biosecurity issues lead to improved security of Australian banana production (measured by incident and response) • Access to industry data improves management and marketing decisions at industry and enterprise levels. Levy payers place value in the data provided (Independent evaluation 2015/16 and 2018/19 with majority of production (70% of volume) identifying benefit from the investment) • Production enterprise benchmarking data continue to be collected to inform enterprise management and SIP evaluation. 		

⁶ Measured through production enterprise benchmarking

Objective 2: Increase demand for Australian bananas by:

- Increasing the value of the banana category by \$10.2M per annum
- Maintaining banana's #1 fruit status⁷

Investment Rationale

Determining consumer preferences and purchase drivers to assist in building demand and creating greater value in the category

Quantifying consumer preferences and purchase drivers in relation to product offerings (fruit quality (maturity, appearance, texture, size etc.); presentation (packaging, display format, product ranging etc.); and identifying practices or attributes that enhance or detract from the eating and / or purchasing experience are critical. Not meeting the consumers' needs and expectations in regard to the product offering available from the Australian banana industry has the ability to limit demand and growth of the category, and, consequently, returns to growers. Examples of successful diversification and the creation of value in other fruit categories should be seen as yardsticks to which the sector should aspire. By developing a more in-depth understanding of the consumer and their purchase drivers, the industry can respond appropriately. This may lead to the development and adoption of new production and supply chain guidelines, standards and / or practices, the adoption of new varieties, the development of new products and supply channels (value-added products; packaging etc.) to build product demand and capture value through developing unique points of difference.

There is a need for ongoing market intelligence to monitor and evaluate market conditions

The industry needs to monitor category performance, market conditions and trends continually, to ensure it has appropriate information to inform and evaluate the market development and promotion program. Access to these data is also important to mitigate threats to demand and to identify opportunities that the industry can exploit to maximise value for the category.

New trends and technologies may provide the opportunity for the Australian banana industry to develop new fresh or value-added products that better meet consumer needs, access new markets or extend existing markets, therefore driving demand. Conversely new trends or technologies may also provide opportunities for competitors to capture market share and erode existing market potential. It is therefore imperative that these potential impacts are understood and responded to appropriately.

It is also important that this information is easily accessible to levy payers, so that it might inform business development activities at an enterprise level.

Effective marketing and promotions will drive demand

An effective marketing and promotions campaign has the potential to influence product demand positively and consequently price, category value and returns to growers. Since the introduction of the marketing levy in 2008, the industry has focused on growing consumption of bananas by aiming to make Australian Bananas' Australia's No. 1 snack food. It has done this through utilising consumer and market research to target specific demographic groups where there is the greatest potential to increase banana purchase and occasionality.

Consumers need to have confidence in the product they are purchasing

Increasingly consumers are also concerned with the environmental, ethical and social aspects of the foods they eat. The industry and allied stakeholders have made significant investments over many years to support good environmental outcomes for the industry. Likewise the industry is also a major contributor to regional economies and operates in an ethical and socially responsible framework. These credentials need to be quantified, documented and communicated on a regular basis.

The industry also needs to have appropriate food safety protocols in place and the capacity to address any incidents in the event of such an occurrence. Consumers need to have confidence that any food safety breaches are being handled professionally and with the well-being of the consumer as the paramount concern.

⁷ This objective will be reviewed in June 2015 when new three-year Marketing Plan is developed. The intent is to align the objectives related to product demand within the Strategic Investment Plan with the objectives of the three-year Marketing Plan.

Objective 2: Increase demand for Australian bananas by:

- Increasing the value of the banana category by \$10.2M per annum
- Maintaining banana's #1 fruit status⁸

Strategies	2.1 Gain greater insight into consumer preferences and behaviour, and monitor market performance	2.2 Optimise the positioning of Australian bananas in existing & emerging domestic market channels	2.3 Maintain confidence in the Australian banana industry by proactively managing product issues
Sub-strategies	<p>2.1.1 Undertake detailed and targeted consumer research to identify purchase drivers and constraints (including areas such as taste, size, appearance, packaging, presentation and pricing)</p> <p>2.1.2 Invest in market research and intelligence</p> <p>(Together these sub-strategies can inform investment decisions and identify threats and opportunities for the category at industry and enterprise levels)</p>	<p>2.2.1 Informed by consumer and market research, develop and execute an effective marketing and promotions campaign.</p>	<p>2.3.1 Continue to quantify and communicate the economic and social value, and the environmental stewardship provided by the Australian banana industry</p> <p>2.3.2 Ensure the industry has appropriate protocols in place to support food safety across the supply chain and address any incidents (see strategy 3.3.3)</p>
Outcomes	<ul style="list-style-type: none"> Improved access to consumer and market research supports management and marketing decisions at enterprise and industry levels, leading to improved industry performance. Levy payers place value in the data provided. (Independent evaluation 2015/16 and 2018/19, with majority of production (70% of volume) gaining identifying benefit from the investment) The industry has identified a sustainable point of difference that makes it uniquely Australian and is valued by consumers. Outcomes from levy investment are maximised by ensuring all relevant strategies within this Plan (especially 1.1, 1.2, 2.2 and 3.1) are informed by consumer and market research. Key performance indicators of the Banana Industry Marketing Plan 2012 – 2015 (and subsequent Industry Marketing Plans) are achieved. In seeking continuous improvement, an independent review is undertaken at the completion of each three-year Marketing Plan to inform the development of the following Marketing Plan. Industry stakeholders are informed about the Australian banana industry's economic and social contribution, and the environmental stewardship it provides. The industry has the ability to manage any food safety incident appropriately (protocols in place by 2015). 		

Note: The key Objective for this area needs to be adjusted appropriately at the commencement of each new three-year Banana Industry Marketing Plan.

⁸ This objective will be reviewed June 2015 when new three year Marketing Plan is developed. The intent is to align the objectives related to product demand within the Strategic Investment Plan with the objectives of the three year Marketing Plan.

Objective 3: Improve industry capacity and R&D adoption; and demonstrate benefit of levy investments by:

- Engaging > 50% of production acreage in the technical update series⁹
- Increasing participation in Banana BMP to >50% of production acreage and continuously increasing adoption of best management practice across the industry
- Achieving an ROI of banana industry R&D levy funds of 4.1:1 over the life of the Plan.

Investment Rationale

Effective extension and communication increases the adoption of R&D

The extension of R&D at the production and supply chain levels is important to facilitate practice change and improved outcomes for the sector. Initiatives, such as the Best Management Practice toolkit, which draw on and consolidate industry research, foster adoption of improved on-farm practices.

Allied with this is the requirement for an effective industry communication program. Together these industry development activities have the ability to build knowledge, know-how and the necessary skills to better manage production, supply chain and market development; and build more productive, profitable and resilient businesses.

There is a need to build industry capacity and resilience continually

By identifying areas where the industry needs support or additional skills to develop and thrive, suitable solutions can be tailored to achieve address these needs. These solutions might include provision of information, training, succession planning, acquiring the skills (people) and investing in the next generation (growers, researchers, supply chain participants).

Industry will also benefit from building effective networks and seeking strategic partners and other funding sources. By building relationships and alliances with strategic partners, such as other research agencies and funding bodies, the industry will be more likely to achieve the objectives of this and future Plans. This particularly relates to finding solutions to the diminishing R&D and financial resources available to the industry.

Industry stakeholders must realise and value benefits from investment of the industry levy

There is a requirement to demonstrate a strong return on investment of levy funds through appropriate consultation, governance, program/project structures and outcomes for levy payers, the community and the Australian Government. Industry consultation is an integral part of the HAL Industry Advisory Committee process. A structured and engaging process is important so that levy payers and other industry stakeholders are able to provide comment and feedback on the direction of RD&E and marketing & promotion which is being undertaken or proposed on behalf of the industry – this assists in delivering more targeted outcomes for levy payers. Additionally it must be shown that the public monies of industry levies and Commonwealth matching funds are being allocated appropriately and are addressing Government research and development priorities.

Appropriate risk management strategies are required to mitigate adverse industry events and / or market conditions

The industry potentially faces a number of challenges in the years ahead which have the potential to affect the viability of the industry and for which appropriate risk management strategies should be developed. Of concern are extreme weather events, biosecurity incursions, changed government policy settings etc.

⁹ As part of the Banana Extension Project

Objective 3: Improve industry capacity and R&D adoption; and demonstrate benefit of levy investments by:

- Engaging >50% of production acreage in the technical update series ¹⁰
- Increasing participation in Banana BMP to > 50% of production acreage and continuously increasing adoption of best management practice across the industry
- Achieving an ROI of banana industry R&D levy funds of 4.1:1 over the life of the Plan.

Strategies	3.1 Promote adoption of appropriate R&D and facilitate other industry development activities	3.2 Continue to build industry skills and develop appropriate structures and resources to meet industry needs	3.3 Ensure the industry has appropriate processes, resources and risk management strategies to function effectively
Sub-strategies	<p>3.1.1 Through effective extension, facilitate the adoption of best management practice to assist growers in improving productivity and environmental outcomes at production level (Aligned to Strategy 1.1)</p> <p>3.1.2 Through effective extension and education, promote the adoption of best practice handling to improve handling practices through the supply chain to maximise product quality at retail level, minimise shrinkage and optimise returns to growers (Aligned to Strategy 1.2)</p> <p>3.1.3 Deliver a comprehensive industry communications program and undertake other activities to support industry development</p>	<p>3.2.1 Assess and build the capacity and resilience of industry and its management, through appropriate education and training activities, networking opportunities and succession planning</p> <p>3.2.2 Invest in the necessary skills (people resources) to meet the current / future R&D and biosecurity needs of industry and / or develop effective mechanisms (collaborative approaches) to address shortfalls in these skills</p> <p>3.2.3 Continue to develop international networks proactively, and foster co-operation and partnerships to improve global market intelligence, research collaboration and other opportunities for the Australian banana industry</p>	<p>3.3.1 Ensure an effective advisory process and demonstrate strong ROI of HAL-administered funds through appropriate consultation, governance, program/project structures and outcomes. Review levy structures and rates as appropriate</p> <p>3.3.2 Investigate and seek additional income/funding/support to facilitate industry development, R&D and marketing activities (aligned with this Plan) that fall outside industry levy funding</p> <p>3.3.3 Maintain risk planning activities and associated training to ensure appropriate responses to issues and events that may affect the viability of the Australian banana industry (e.g. crisis management planning)</p>
Outcomes	<ul style="list-style-type: none"> • Research findings and education are being extended to the supply chain to deliver better outcomes at retail (to be measured by category assessment). • The industry has a succession plan in place and ensures those taking leadership roles have appropriate support / training. • The industry has mapped current and future R&D skill requirements against current and future capacity requirements and has a documented approach to attempt to address identified gaps and shortfalls. This approach is being implemented. • Industry capacity and networks continue to strengthen, supported by industry study tours (open to levy payers) which are conducted on a regular basis (minimum every 2 years). • Greater industry outcomes are achieved through accessing additional funding / support outside the industry levy mechanism for industry development, R&D and / or marketing activities. • Industry risks are mitigated through appropriate risk management planning and investment in related training for industry leaders (minimum of one training event every 2 years). 		

¹⁰ As part of the Banana Extension Project

Assessment and allocation of proposed investment

Analytical Business Case Approach

The Analytical Business Case (ABC) is a formal assessment process that draws from a range of tools to provide rigour and comparison between competing research investment areas and thus enhance the overall Strategic Investment Plan (SIP) (HAL Strategic Planning Guidelines November 2009).

The scope of the ABC was agreed with HAL prior to commencement of the assessment and addresses R&D investment. Two sets of analyses were undertaken:

1. Review of past R&D investments – to provide an insight into the performance of the Banana Industry SIP 2009- 2014 and help to inform the SIP 2014/15 - 2018/19
2. Benefit cost analysis of the new SIP 2014/15-2018/19.

The evaluation of past investments in banana industry strategies reveals positive benefit cost ratios ranging from 1.94 (Crop and Environment) to 9.05 (Packhouse and Supply Chains). The banana industry targeted a 4:1 benefit cost ratio for its investment in the 2009 - 2014 Strategic Investment Plan and the seven clusters of projects analysed, as part of Step 1 above, are expected to deliver an overall benefit cost ratio of 4.6.

The ABC for the Banana Industry SIP 2014/15 – 2018/19 uses benefit cost analysis techniques as described by Council for Rural Research and Development Corporation Guidelines (CRRDC updated 2012).

The Present Value of Benefits (PVB) and Present Value of Costs (PVC) were used to estimate investment criteria of Net Present Value (NPV) and Benefit-Cost Ratio (BCR) at a discount rate of 5% real. Internal Rate of Return (IRR) was also estimated. The PVB and PVC are the sums of the discounted streams of benefits and costs. The discounting is used to allow for the time value of money, and the discount rate of 5% is that specified in the CRRDC Guidelines.

In addition to private benefits accruing to banana growers there are likely to be ‘spill-over’ community environmental and social benefits associated with implementing the SIP. Spill-over benefits are identified but not quantified in this ABC.

Strategic Investment Plan 2015-2019 - Analytical Business Case Framework and Data Used

The benefit cost analysis is reliant on data and assumptions and this information was assembled from the:

- Profile of the Australian Banana Industry – 2014 (SIP May 2014)
- Banana Enterprise Comparison Program F2012 – CDI Pinnacle Management, 30 September 2013¹¹
- Industry Advisory Committee (IAC) advice - SIP review meeting Cairns FNQ 13 February 2014 and Brisbane 5 May 2014
- Communicating Uncertainty in Biosecurity Adaption – Cook *et al.* May 2012
- Community benefits including social and environmental spill-overs were identified by the consultant using past experience and IAC advice.

Analytical Business Case Results

Review of the current SIP covering the 2014/15 – 2018/19 period shows a forecast overall BCR of 4.1 (see Table 1 below). Returns from the proposed portfolio range from a high of 9.5 for ‘Consumer preferences and monitoring market performance’ and 8.9 for ‘Packhouse and supply chain’ to more modest positive returns for ‘Processes, resources and risk management’ and ‘Production systems’.

The ABC results are summarised in the table below:

¹¹ F2013 data and data not affected by a cyclone were sought from CDI Pinnacle Management but were not available – Howard Hall, 7 May 2014

Table 1: Analytical Business Case Evaluation Results (discount rate 5%)

No	Strategy	PV Benefits (\$'million)	PV Costs (\$'million)	Net Present Value (\$'million)	Benefit Cost Ratio (BCR)	Internal Rate of Return (%)	Enviro Benefit	Social Benefit
1.1	Production systems	26.3	8.8	17.5	3.0	8	vvv	v
1.2	Packhouse and supply chain	0.8	0.1	0.7	8.9	35	vv	Nil
1.3	Biosecurity	4.1	0.6	3.7	6.3	35	v	vv
2.1	Consumer preferences, monitoring market performance	5.7	0.6	5.1	9.5	39	Nil	Nil
2.2	Marketing and promotions campaign	N/a	N/a	N/a	N/a	N/a	Nil	v
2.3	Industry issues	2.8	0.5	2.3	5.3	26	vvv	vvv
3.1	Adoption of R&D	20.2	3.5	16.7	5.8	19	vvv	v
3.2	Industry skills and resources	0.8	0.2	0.6	4.7	18	Nil	vvv
3.3	Processes, resources and risk management	2.1	0.8	1.3	2.6	13	vv	v
	Total SIP Impact	62.8	15.1	47.7	4.1	26		

Key: vvv Strong environmental or social outcome, vv moderate outcomes, v minor outcomes.

PV = Present value

N.B. Only R&D investments were analysed as part of this project i.e. no analysis was completed for Strategy 2.2

The Banana Industry Advisory Committee, HAL and the Australian Banana Growers' Council will continually monitor investment priorities to ensure strong return on investment. Over time investment priorities may change as the situation of the industry changes.

Proposed indicative funding allocation across strategies

Below is an indicative allocation of funds over the five-year life of the SIP (2014/15 – 2018/19).

The allocation of investment is informed by the Analytical Business Case (above) and in-depth consultation with the Industry Advisory Committee.

		Approximate Available Funds
Estimated investment funds		\$
Available R&D Levy ^a	Matched	\$17,364,250
Available Marketing Levy ^b		\$18,245,000
Estimated project costs		Approximate Investment \$
Objective 1: Maintain a consistent and quality supply of Australian bananas whilst achieving a 5% productivity gain by 2018/19		\$10,953,500
Objective 2: Increase demand for Australian bananas		\$1,307,250 \$17,432,000^c
Objective 3: Improve industry capacity and R&D adoption		\$5,103,500 \$813,000^c
Total - all R&D		\$17,364,250
Total - all Marketing		\$18,245,000
TOTAL INVESTMENT		\$35,609,250

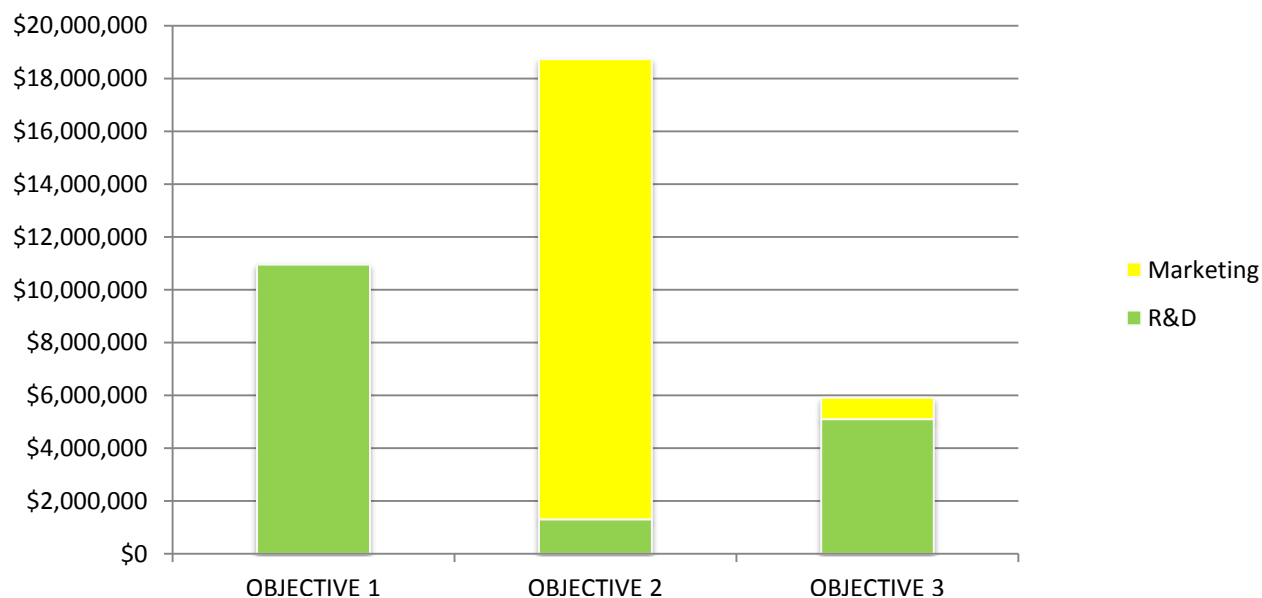
^a Indicative investment funds available for R&D, industry consultation agreement funding and generation of Annual Industry Report after estimated deduction for LRS and HAL Corporate Recovery Costs and Across Industry contributions

^b Indicative investment funds available for marketing & promotion, industry consultation agreement funding and generation of Annual Industry Report after estimated deduction for LRS and HAL Corporate Recovery Costs.

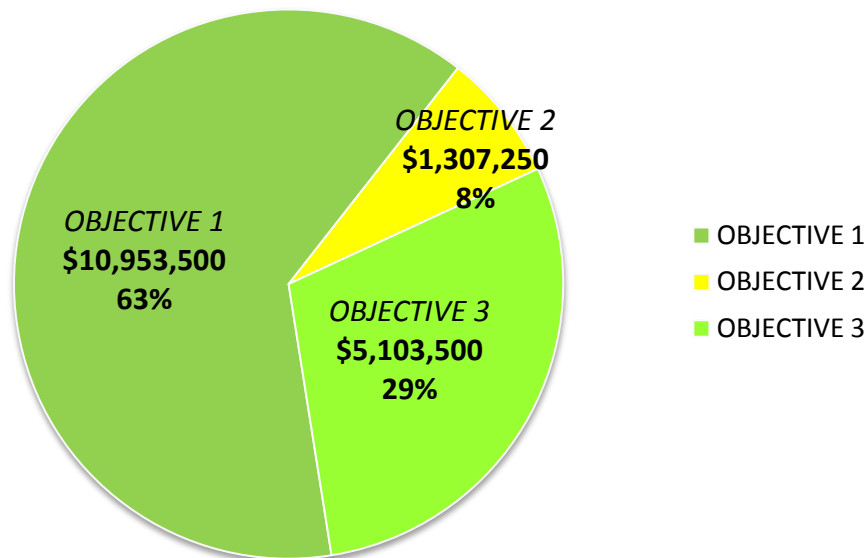
Indicative investment from R&D matched levy unless otherwise stated

^c Indicative investment to be made from marketing levy

Proposed indicative investment by objective -2014/15 – 2018/19 (including R&D and marketing levy investment)



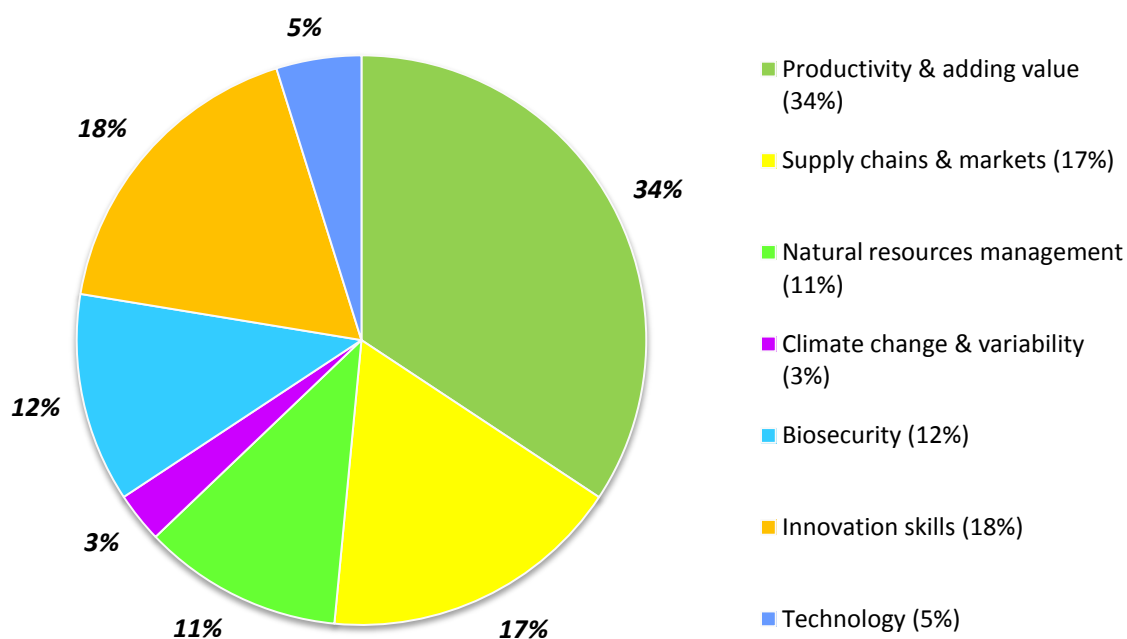
Proposed indicative investment by objective (R&D levy investment only) (2014/15 – 2018/19)



Proposed R&D investment by Australian Government Rural R&D priorities

The Plan is also required to address the Australian Government's Rural Research and Development priorities. Below is the proposed allocation of R&D investment against these priorities over the life of the Strategic Investment Plan.

Proposed R&D investment by Australian Government Rural R&D priorities* (2014/15 – 2018/19)



* Total R&D investment is A\$17.4 million over the life of the Plan. This includes R&D consultation agreement funding. It does not include marketing levy investment.

Acknowledgments

The growers and other industry stakeholders that participated in the consultation process for this Plan are thanked for the time, comments and ideas they contributed. IAC and IAC subcommittee members and HAL staff are also acknowledged for their contribution and effort.

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Appendix 1: Profile of the Australian Banana Industry 2013

Updated May 2014

About production

Production areas

In Australia, bananas are grown in both tropical and subtropical regions. In total there are approximately 12,900 hectares of bananas under production in Australia.

The tropical banana-growing regions are in North Queensland and the Northern Territory. North Queensland accounts for approximately 11,360 hectares of banana and 95% of Australian production. North Queensland production is centred around Tully, Innisfail, the Atherton Tablelands and Lakeland. Ongoing threat from adverse weather conditions in North Queensland is resulting in geographic diversification of production throughout the region.

Production in the Northern Territory has declined since 1990s because of the impact of Panama (Tropical Race 4) disease. Reported production in 2000 was 7000 tonnes. Today there is only one large commercial banana plantation.

In 2013, bananas have also been planted in the far north of Western Australia, near Kununurra in the eastern Kimberley region close to the Northern Territory border.

Subtropical growing regions include Northern NSW, South-east Queensland and Carnarvon, Western Australia.

In NSW, the main growing regions include the Tweed and Brunswick valleys in the north, west to Lismore and south to Ballina. Further south, there are growing regions from Woolgoolga to Coffs Harbour to Stuart's Point. There are estimated to be 356 banana farms in New South Wales.

In South-east Queensland, the main banana growing areas are at Wamuran, the Sunshine Coast and around Bundaberg.

In Western Australia, is estimated to be 190 hectares, in the sub-tropics at Carnarvon and in the tropics near Kununurra. Production from these areas supplies some of the Perth market.

Australian Banana Industry Statistics by State				
	Nth QLD	NSW	Other regions	Total
Total Area of Bananas (ha)	11,360	1,110	420	12,890
Production * (Tonnes)	327,360	17,600	7,040	352,000
% of Production	93	5	2	100
No. of Farms**	301	356	56	713
Source: * - Production is based on expected 2013/14 production (ABGC) **Estimate as of May 2014 (ABGC)				

Banana production was severely affected in February 2011 when Tropical Cyclone Yasi devastated the major production regions in North Queensland (Tully, Innisfail, Silkwood, Mourilyan). It is estimated that approximately 75% of Australian production was affected and it resulted in significant shortages of supply until late 2011.

Varieties

In Australia, Cavendish bananas account for about 95% of the market. The remaining 5% is made up of Lady Finger bananas and other cultivars such as Goldfinger, Ducasse, Red Dacca, Sucrier and Pacific Plantain.

Volumes and value

Total volume of fruit marketed fluctuates from week to week depending on climatic conditions. In a year not adversely affected by climatic conditions, average annual production is between 330,000 and 350,000 tonnes. In 2012/13, 26.1

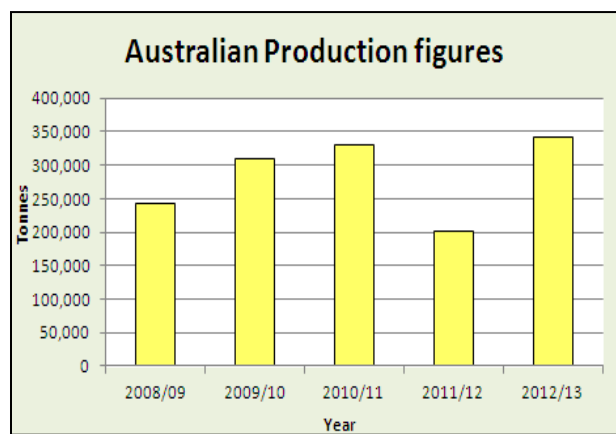
million (13 kg) cartons were produced, which was 340,000 tonnes. On a weekly basis supply varies from 300,000 to 600,000 cartons. The ABGC estimate 2013/14 production (as at April 2014, post Cyclone Ita) to be 27.1 million cartons, or 352,000 tonnes¹².

Tropical north Queensland production is year-round with only one, small, market-induced dip at Christmas. The subtropical industry has a summer/autumn production peak.

It is expected that industry expansion will continue to follow population growth, notwithstanding major changes in the marketing approach and allowing for seasonal factors (oversupply / undersupply swings, cyclones, exotic disease outbreaks).

The annual farm gate value of banana production in Australia is about AU\$500 million.

Average yearly production figures for the Australian banana crop from 2007 to 2011 are shown in the table below.



Source: HAL levy data 2013.

¹² Jim Pekin - ABGC, pers. comm. 13 February 2014

About the product

Recent research suggests the banana industry is now the largest single horticultural industry in Australia. Retail sales reflect this, with bananas outselling not only every other fruit and vegetable but every other supermarket line.¹³

Nutritional and health attributes

Bananas are among the most nutritious of foods. They are sources of potassium, vitamin B6, B group vitamins, folate, niacin and riboflavin as well as Vitamin C. Bananas have significant antioxidant power, are a source of dietary fibre, have a low Glycemic Index and give a sustained energy boost.

The fruit also contains lectins, which have been strongly linked to a reduction in the risk of cancer and potentially helpful in the treatment of cancer. Lastly, bananas have a high satiety index, that is, they are very filling for the number of kilojoules they provide. Four bananas have the same number of kilojoules as a serving of medium French fries, yet are so much more filling.¹⁴

Consumers and consumer research

On average, about five million bananas are eaten every day in Australia, and by world standards Australian consumption is relatively high at 15.1 kg/person/year for 2012/13.

Despite the industry's worst-ever cyclone, Tropical Cyclone Yasi, which significantly reduced supply for a seven-month period during 2011, per capita consumption has increased by 12.9% over a four-year period between 2008/09 and 2012/13.¹⁵

The banana industry has made significant investment in market and consumer research to gain greater insight into market performance and

¹³ Banana Industry Advisory Committee Annual report 2012/13

¹⁴ ABGC website, 'Our Industry', 29 July 2013, <http://abgc.org.au/banana-industry-2/our-industry/>

¹⁵ ABGC website, 'Industry Info', 29 July 2013, <http://abgc.org.au/projects-resources/industry-info/>

to assist in market development and promotion campaigns.

Research shows that consumers are responding well to the three-year marketing campaign and are sharing those messages in record numbers via social media. Market research is undertaken by Nielsen to track performance of the sector and to inform the development of the marketing program.

The Australian Bananas Facebook fanbase has also grown rapidly, with an increase of 52,345 fans between July 2012 and April 2013 (a total of over 100,000 fans).¹⁶

About the market and its structures

Bananas are the most consumed tropical fruit in the world, with total global production in 2009 being 105 - 120 million metric tonnes (mMT) and an export trade of 14 mMT, generating nearly US\$8 billion in trade. Bananas are grown by over 150 countries.¹⁷ In global terms Australia is a very small player in the world banana market, with less than 0.3% of world production and negligible exports.

All fresh bananas available in Australia are grown in Australia. There are no fresh banana imports because of market access restrictions imposed because of disease threats from potential importing countries.

Markets – Domestic & Export

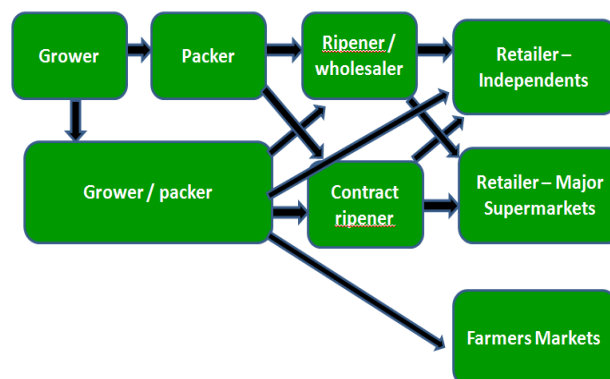
The Australian banana industry relies almost exclusively on the domestic fresh fruit market for sales.

The supermarkets dominate the retail space, with an estimated 60% of Australian bananas being sold through this channel.

Direct supply by growers to supermarket is increasing driven by cost pressures in the supply chain and increased competition at retail level.

There are approximately 25 major banana ripeners / wholesalers in the Australian market, servicing all major capital cities.

The Australian Banana Industry Supply Chain



Exports are almost nonexistent, as Australian bananas cannot compete on price with other low labour cost, high quality suppliers of commodity fruits. Niche opportunities do, however, need to be considered as part of the “mix” for an industry facing possible future import competition.

Only cooked or dried banana products can be imported into Australia without restriction. These products are produced with very low labour costs and hence this has constrained value adding of bananas in Australia.

¹⁶ *Banana Industry Advisory Committee Annual report 2012/13*

¹⁷ *United Nations Conference on Trade and Development, July 2013. <http://www.unctad.info/en/Infocomm/AACP-Products/COMMODITY-PROFILE---Banana/>*

Promotions and market development

The industry expended approximately \$3.45 million in marketing projects in 2012/13.¹⁸ In addition there was also investment in consumer and market research to inform the marketing campaign.

Trends affecting marketing systems

There are a number of influences that are driving how horticultural markets work:

- Rationalisation of supply chains globally limiting the options for small to medium-sized growers who lack the scale to interest larger buyers
- Increasingly innovation and productivity improvements are being driven by commercial value chains as they seek to develop improved products that are better meeting consumer needs
- Governments are becoming less involved in industry development and more involved in issues relating to consumer protection.

At the same time there are a number of macro-trends affecting consumer behaviour. These include: population growth; a focus on convenience; changes in family structure; an emphasis on health properties of food driven by an ageing population and increasing obesity; and more discerning consumers who are showing interest in emotional, ethical, aesthetic or environmental factors when purchasing food.

About industry structure, support and funding

Australian Banana Growers Council (ABGC):

The ABGC is the Australian banana industry's peak national agri-political organisation and represents Australia's 713 banana growers.

Its stated mission is to advance the interests of Australian banana growers through effective leadership and representation to ensure a strong industry future.

It was established in February 1961 and represents the interests of Australian banana growers on issues including: representations to policy and decision makers and the banana Industry Advisory Committee (IAC), biosecurity, pest and disease management, research and development, supply-chain issues and banana marketing.

ABGC is funded through voluntary membership fees. This grower fee is 3 cents per 13-kg carton of bananas. Its operations are not funded by any government and are not directly funded by industry levies, although in some instances it may be a service provider to the industry and receive HAL or Government funding to undertake these services.

Alliances

The industry through ABGC retains alliances and linkages with numerous organisations with the aim of encouraging the long-term sustainable growth of the industry. ABGC works closely with Horticulture Australia (HAL) to support the industry's research, development and marketing programs. In addition it also works with Plant Health Australia (PHA), the Australian Government, relevant State and Territory Governments, universities, other horticulture industry organisations, and a number of industry service providers including research organisations.

¹⁸ *Banana Industry Advisory Committee Annual report 2012/13*

Industry funding and support

HAL manages the Australian banana industry's R&D and marketing programs, which are funded through a compulsory industry levy on the sale of bananas. This levy was introduced for the banana industry in 2008.

Industry levies: Industry levies are imposed, collected and dispersed through Commonwealth legislation. They are collected by the Australian Government on behalf of all levy-paying horticultural industries, including the Australian banana industry. Through accompanying regulation, HAL is charged with managing the expenditure of banana R&D and marketing levy funds and is responsible for all related decisions. It receives recommendations from the Banana IAC on the investment of levies and is accountable to the Department of Agriculture, Fisheries and Forestry (DAFF) with respect to these investment decisions. As the legislatively prescribed industry body, the ABGC has a role in making recommendations to HAL about the composition of the Banana IAC.

When expended on R&D that aligns with the Industry Strategic Investment Plan, levy funds are able to be matched dollar for dollar, up to a total of 0.5% of annual gross value of production for horticulture, by the Australian Government. When funds are expended on marketing activities they are not eligible for matched funding. The Australian Government requires outcomes from its co-investment that demonstrably meet its National Research Priorities and Rural Research and Development Priorities.

The banana industry levy is calculated as 1.7 cents per kilogram of bananas (equivalent to 22.1 cents per 13-kg carton), with 1.15 c/kg being directed to promotion; 0.54 c/kg to R&D and, from 2013/14, 0.01 c/kg to biosecurity. With the current levy, the industry has a budget of around \$2.9 million per annum for R&D and \$3.2 million per annum for marketing. This levy is collected by Levies Revenue Service (LRS) of DAFF, which

forwards the funds to HAL and distributes the Australian Government's matching R&D contributions. The Government does not match the industry levy for marketing.

In 2012/13, the total investment of industry / Government funds administered by HAL for the banana industry was A\$2.49 million for R&D and A\$3.45 million for marketing projects.

Voluntary contributions: The voluntary contribution mechanism allows HAL to support R&D activities funded by money other than statutory levies. When expended on R&D that aligns with the Industry Strategic Investment Plan, voluntary contributions are able to be matched dollar for dollar by the Australian Government.

In addition to industry levy funds, A\$177,235 of voluntary contribution funds (VCs) were provided to the industry in 2012/13 for supplementing and / or solely funding VC-only projects in the R&D program.

Other Sources: There is also significant R&D investment in the industry from other sources, such as:

- State and Territory Departments of Primary Industries, in particular Queensland Department of Agriculture, Fisheries and Forestry
- Australian Centre for International Agricultural Research (ACIAR) and other Australian Government agencies
- Commercial businesses that participate in the supply chain, such as plant protection, fertiliser and packaging companies; growers, wholesalers, marketers and retailers.

Research support

The industry is supported by a range of R&D service providers, including State and Territory Governments (Queensland, New South Wales, Western Australia and the Northern Territory) and private sector businesses.

In September 2010 the Australian Government through the Primary Industries Standing Committee (PISC) ratified the National Horticulture Research Framework. The Framework sets out future RD&E commitment and investment, by Australia's State and Commonwealth agricultural agencies to the Australian horticultural industries. Its aim is to facilitate greater co-ordination and capability amongst Agencies and industry. Agencies nominate to fill national "Major Priority", "Support" or "Link" roles, for RD&E, for the main horticultural crops.

For the banana industry, the "Major Priority" agency is the DAFF Queensland. Consequently its role is to assume a national leadership position and to give a high priority to funding research, infrastructure and national coordination for the Australian banana industry.

The "Support" agencies include New South Wales, Northern Territory and Western Australian Government agencies. These organisations have agreed to support the industry by undertaking crop research.

Private sector research providers also play an important role in the delivery of industry RD&E. Larger growers and packers / marketers often employ specialist research companies and agronomists to assist with crop management and supply chain development.

Technical information and communication

There are a number of regular publications that inform the banana industry. These include:

- Growers' e-bulletin (monthly)
- *Australian Banana News* newsletter (every second month)
- *Australian Bananas* magazine (April, August, December).

A biennial congress, hosted by the Australian Banana Growers' Council, showcases the national industry and covers topical issues and research

findings. The most recent congress was in May 2013 on the Sunshine Coast.

Biosecurity

Ensuring the Australian banana industry has the capacity to minimise the risk of pests, and to respond effectively to any pest threats, is critical for the future sustainability and viability of the industry. Biosecurity planning provides a mechanism for the industry, Government and other relevant stakeholders to actively determine pests, analyse the risks, put in place procedures to reduce the chance of pests reaching our borders, and procedures to minimise the threat if a pest incursion occurs.

The North Queensland banana industry, because of its proximity to Cape York and the Torres Strait islands, must be constantly on guard against the introduction of exotic pests and diseases.

Currently the main exotic disease threats to Australia are:

- Tropical Race 4 Panama (currently present in the Northern Territory and responsible for contraction of the NT industry)
- Freckle, which is currently subject to an Emergency Plant Pest Response eradication program in the Northern Territory, where the pest was found in late 2013 on a small number of infected rural residential properties
- Potential recurrence of Black Sigatoka diseases (appeared and eradicated in 2001)
- Bacterial diseases including Blood Disease and Moko.

Endemic disease threats (those existing in Australia) include bunchy top virus, yellow Sigatoka, Panama Race 1, Subtropical Race 4, bunch pests and weevil borer.

The industry has a National Banana Industry Biosecurity Plan (version 2, July 2010), which outlines the key threats to the industry, risk mitigation plans, identification and categorisation

of exotic pests and contingency plans. Additionally there is a Farm Biosecurity Manual which contains practical information that producers can implement on-farm to reduce the likelihood of exotic pests and diseases.



Community

In 2009 – 2010 (the year before the impact of Cyclone Yasi) the banana industry contributed \$1.1 billion per annum to the three main banana-growing regions of far North Queensland, Northern New South Wales and Carnarvon Western Australia (an output multiplier of 1.88), and 9,598 full time equivalent jobs (an employment multiplier of 2.52). It also represented 9.5% of total private business turnover across the three regions and 8.24% of full time equivalent jobs. This information at regional level is summarised in the table below.

The total direct expenditure by banana farms during the 2009-2010 year (when production was estimated at 310,000 tonnes) is estimated at \$573 million. Direct employment by banana farms totalled 3,826 full time employee equivalent units.

The analysis also concluded that the industry contributes between 30% and 50% of the gross value of fruit production and 3% and 8% of total gross value of agricultural production in Queensland, not including the influence of major climatic events.

Summary Economic Contribution of Australian Banana Industry 2009-2010				
	FNQ	Nth NSW	Carnarvon	Total
Total Output (\$m)	951	87	39	1,077
Output Multiplier	1.87	1.96	1.99	1.88
% of Total Business Turnover	13.60%	2.20%	11.70%	9.50%
Total FTE Jobs	8,384	888	326	9,598
% of Total FTE Jobs	12.60%	1.92%	9.01%	8.24%
Employment Multiplier	2.51	2.48	2.56	2.52

Source: Value of the Australian Banana Industry to Local & National Economies, CDI Pinnacle, 2013, [from: Banana Enterprise Comparison Project BA 10026 (2009-10 data collection round); CDI Pinnacle Interviews with 50 upstream and downstream businesses; Street Ryan estimates of multipliers].

The banana industry has also been proactive in addressing environmental issues particularly in the wet tropics region of North Queensland where there has been an increased focus on environmental management because of the impact of land-based agricultural operations on the health of the Great Barrier Reef.

Overall the industry enjoys a good relationship with the local communities in which it operates. It supports local community activities such as agricultural shows, festivals and schools and sports events through the Australian Bananas marketing program.

