Horticulture Innovation Australia

Final Report

Banana Enterprise Performance Comparison #2

Shane Comiskey
CDI Pinnacle Management Pty Ltd

Project Number: BA10026

BA10026

This project has been funded by Horticulture Innovation Australia Limited using the banana industry levy and funds from the Australian Government.

This report was previously confidential.
The confidentiality period has now expired. Please ignore all references to confidentiality within the report.

ISBN 0 7341 3641 2

Published and distributed by:
Horticulture Innovation Australia Limited
Level 8, 1 Chifley Square
Sydney NSW 2000
Tel: (02) 8295 2300
Fax: (02) 8295 2399

Project No. BA10026 (February, 2012)

Prepared By:
Shane Comiskey
P O Box 1800, Milton QLD
Web: www.pinnaclemanagement.com.au

Acknowledgement of Funding Sources

This project has been funded with the support of Horticulture Australia Ltd and levy funds contributed by banana growers through their national levy.

Purpose of Report:

BA10026 is a follow-on project from BA09307, which provided business and economic performance data, in addition to key production, packing and marketing system information for 46 banana growers across 3 states of Australia. BA10026 has involved the collection of the same data sets, in addition to new data sets pertaining to Human Resource Management and Marketing Skills. Further, some of the original data sets have been expanded in terms of the level of detail sourced from growers. A total of 59 growers have been participants in the project. 40 of these growers also participated in Year 1.

The principle goal of the project is to provide growers with a tool that that will enable them to identify and implement superior production, packaging, marketing and human resource management systems in use by other growers. By implementing superior practices, growers arebetter positioned to improve their long term productive and financial viability. Further, by comparing data across multiple years growers are able to identify the consequences of any changed activities.

For those growers who have contributed 2 years of data, they are also provided with analyses of how their own individual business performance has changed over 2 financial years (2008/09 and 2009/10). Growers are then able to identify how changes in business management practices have impacted a broad range of business performance indicators.

The purpose of this report is to:

- Document the approach / methodology undertaken by the consultants in conducting this project.
- Provide by way of example the quantitative and qualitative benchmarking reports that have been provided to each of the grower participants.
- Provide 'industry' average data and observations on their importance on a broad range of key performance indicators (KPI's) relating to the average economic and productive performance of all of the growers in the study.
- Provide comparative year data analysis for multi-year participants to identify trends in financial and productive performance (for in this case 2 years).
- Provide observations supported by data analysis of factors that contribute to particular growers having superior business performance (based on 2 years of data).

- Provide recommendations to the Australian banana industry on future R&D needs aimed at enhancing the future viability of growers.

Disclaimer:

Any recommendations contained in this publication do not necessarily represent current HAL policy. No person should act on the basis of the contents of this publication, whether as to matters of fact or opinion or other content, without first obtaining specific, independent professional advice in respect of the matters set out in this publication.

ISBN 978-0-9806740-1-11

Table of Contents

Table of Figures

Table of Tables

Terms and Definitions

Term	Definition
Business expenses	Costs incurred in the operation of the business that are not directly related to the volume of production of bananas eg. insurance, repairs & maintenance.
Cost of goods sold (COGS)	Costs incurred (on-farm and off-farm) that are directly related to the volume of production of bananas.
Full Time Equivalent (FTE)	A person who workers on average 38 hours per week for 48 weeks per year.
Gross profit	Total income less COGS.
Gross profit margin	Gross profit divided by total income expressed as a %.
Net banana sales	Total banana sales less marketing fees and commissions + ripening and handling fees
Net bananas sales per carton	Net banana sales divided by the total number of cartons produced. This KPI the most common one in use when talking to growers about returns.
Net farm gate return per carton	Gross banana sales less [marketing fees & commissions + ripening & handling fees + levies + transport] divided by the total number of cartons packed.
Net profit	Gross profit less business expenses or total income less COGS and expenses. For this project, the majority of growers do not have a provision for depreciation and amortisation.
Net profit margin	Net profit divided by total income expressed as a %.
Off-farm costs	The value of freight outwards + levies + marketing fees and commissions + ripening fees.
On-farm costs	All costs incurred 'inside' the farm gate. For the purposes of this report this relates to all banana expenditure less off farm costs.
Planted area	The area planted to bananas in hectares.
Round I	Refers to Project 09037 with data collated from 2008/09 from 46 growers
Round II	Refers to this project, BA10026, with data collated from 2009/10 from 59 growers

Term	Definition
Total banana area	The total area, in hectares, developed for the planting of bananas. Total banana area equals the unplanted area area + planted area.
Unplanted banana area	The area, in hectares, developed for the planting of bananas but were not planted in 2008/09 and / or 2009/10.

Media Summary

BA10026 is the continuation of project BA09037 which was completed in May, 2011. BA10026 provides business and economic comparative performance data for 59 banana growers in Australia, with 39 of the original 46 growers (from BA09037) participating in Round II. The 59 growers represent 30.2% of the estimated area of Australian banana production.

The principle goal of the project is to provide growers with a tool that that will enable them to identify and implement superior production, packaging, marketing and human resource management systems in use by other growers. By implementing superior practices, growers are better positioned to improve their long term productive and financial viability. Further, by comparing data across multiple years growers are able to identify the consequences of any changed activities on their business. Banana BM is the software tool that has been developed to capture, analyse and then produce the various financial and non-financial reports, charts and qualitative reports that are then supplied to growers.

Apart from permitting growers access to business-to-business data comparisons, industry benefits by having a mechanism to identify key R&D investment areas and to then analyse the benefits of research undertaken.

Data analysis indicates that there is a wide variation in the economic and productive performance of banana growers, with the Top 10 growers generating a highly acceptable average net margin of 22.8%, with the average of all growers significantly lower than at 7.3%. The project has identified 10 characteristics of these Top 10 growers that set them apart from the remainder. The program also compared the financial performance of growers from 3 production groups, Queensland Cavendish growers (43 in total), Sub Tropical Cavendish growers (10) and Lady Finger growers (6). Profitability of Queensland Cavendish is superior to the other 2 groups. Sub-Tropical Cavendish growers had the poorest financial performance.

Business size, variety produced or location does not appear to be a determinant of growers being in the Top 10. Interestingly, the largest grower in the Top 10 was producing 180k cartons per annum.

A total of 7 recommendations have been made from the report.

1. A mechanism for ongoing collection, analysis and reporting of individual grower and industry benchmarks in future years.

2. Developing a project that permits a group of growers to work with a consultant to better understand the findings from this project and to develop a list of key focus points for the business to work on.

3. Working with the Top 10 growers to develop a more detailed understanding of why these growers are more financially successful than their counterparts.

4. Develop a series of activities that improve the Marketing Skills and Human Resource Management skills of growers (2 recommendations).

5. Investigation of an alternative communication strategy involving the use of phone technology to make snippets of relevant information available to growers.

6. The undertaking of an audit of chemicals in use by banana growers.

Technical Summary

This project is an extension of BA09037. These 2 projects combined have delivered to growers 2 years of data analysis pertaining to the financial and productive performance of banana growers, in addition to responses to an extensive array of questions pertaining to how growers grow, harvest, pack and market bananas.

The principle goal of the project is to provide growers with a tool that that will enable them to identify and implement superior production, packaging, marketing and human resource management systems in use by other growers. By implementing superior practices, growers are better positioned to improve their long term productive and financial viability. Further, by comparing data across multiple years growers are able to identify the consequences of any changed activities on their business. Banana BM is the software tool that has been developed to capture, analyse and then produce the various financial and non-financial reports, charts and qualitative reports that are then supplied to growers.

The data capture, analysis and reporting of individual business performance indicators and industry averages has occurred through the development of purpose built database program written in Microsoft Access. Data was obtained from growers via a series of face-to-face and phone interviews with growers. The data was then verified and output reports provided to growers via a CD.

Three grower groups were identified in the course of Round II, Queensland Cavendish (43 growers), Sub Tropical Cavendish (10 growers) and Lady Finger growers (6 growers). Financial and non-financial key performance indicators were compiled for each grower group, as well for the entire group (59 growers).

The key findings in relation to financial and productive performance of All Growers were:

1. Net profit per carton in 09/10 is 3.8% higher compared with 08/09 at $1.65 per carton (net gain of $0.06 per carton). The factors resulting in the price increase are difficult to identify as the varietal and grower mix is different between the 2 years.

2. Average banana sales per farmed ha (again net of marketing and commission fees and ripening and handling fees) were $44,771 which represents an increase of 5.5% on 2008/09.

3. The average net profit per business (before tax) was $184,599, which is a 10.7% increase on the previous year's result.

4. Net margin however declined from 7.5% to 7.3% which is reflective of the higher average business turnover of the businesses in 2009/10 compared to 2008/09. No provision has been included for income tax in this analysis. An average return of 7.5% in today's economic environment would be considered unacceptable if there is any significant borrowings and hence interest cover required.

5. However, more positively 9 growers had a net profit margin in excess of 20% in 2009/10. These Profit Before Tax ("PBT") figures are indicative of very 'healthy' businesses in economic terms.

6. Average on-farm costs of production increased by 7.5% from $15.10 to $16.23 per carton (or $1.13 carton).

7. The average cost of production, not including marketing fees and commission, ripening and handling fees was $18.59 per carton. Some growers would refer to this as the price that they would need to receive at the 'farm gate' in order to 'break even'. Other growers would consider the breakeven price to be $18.36 approximately if we also deduct a standard $0.23 per carton national industry levy. By comparison, the same cost base was $19.73, which represents an increase of $1.14 per carton. Off-farm costs not included in this cost base, namely transport and levies increased by only $0.01.

8. These statistics show that based on the relative populations of 45 and 57 growers respectively that the cost base for banana growers increased by around 7.5% in the single year from 2008/09 to 2009/10. The net sales per carton increased by slightly more than the cost base at $1.28 per carton. Therefore on the basis of these statistics the respective revenue and cost bases both increased between 2008/09 and 2009/10, but the net effect is that growers remain in relatively the same position in terms of net returns per carton. A slight decrease in yields (0.9%) also assists in bring the net position close to zero.

Each contributor to the project receives an extensive array of information that they are able to compare their business against others and information from other growers about how they grow, pack and market bananas.

The key findings in relation to the Top 10 growers when compared with the remainder were:

1. They are 343.9% more profitable in terms of net profit per hectare.

2. They are 31.2 % more productive in terms of cartons per hectare (39.6% in 2008/09)

3. They have 2.5 % higher net sales returns per carton (7.1% in 2008/09)

4. They have 19.8% lower on-farm costs production costs per carton (25.5% in 2008/09)

5. They have labour costs (owners, employees and contractors) 26.0% lower per carton (25.55 in 2008/09)

A total of 7 recommendations have been made from the report.

1. A mechanism for ongoing collection, analysis and reporting of individual grower and industry benchmarks in future years.

2. Developing a project that permits a group of growers to work with a consultant to better understand the findings from this project and to develop a list of key focus points for the business to work on.

3. Working with the Top 10 growers to develop a more detailed understanding of why these growers are more financially successful than their counterparts.

4. Develop a series of activities that improve the Marketing Skills and Human Resource Management skills of growers (2 recommendations).

5. Investigation of an alternative communication strategy involving the use of phone technology to make snippets of relevant information available to growers.

6. The undertaking of an audit of chemicals in use by banana growers.

Introduction

BA10026 is the continuation of project BA09037 which was completed in May, 2011. BA10026 provides business and economic comparative performance data for 59 banana growers in Australia, with 40 of the original 46 growers (from BA09037) participating in Round II. In addition, the project documents key production, packing, marketing and human resource management systems in use by each grower.

The principle goal of the project is to provide growers with a tool that that will enable them to identify and implement superior production, packaging, marketing and human resource management systems in use by other growers. By implementing superior practices, growers are better positioned to improve their long term productive and financial viability.

Individual growers who participated in this project are expected to benefit by:

1. Better understanding where they are performing well against their peers, and more importantly, where improvement is required.

2. Being able to compare their business performance across multiple years (where growers have contributed more than 1 year of data) and so identify the impacts of changed business practices or impacts of other external events.

3. Growers better understanding what can be achieved by the adoption of 'best practice' and the impact that this potentially may have on their economic performance.

4. Growers better understanding what constitutes Australian banana production 'best practice'.

The banana industry, most particularly those responsible for planning and implementing R&D projects, will be:

1. Better understand the key areas that will make the greatest difference to banana growers' livelihoods for future investment in R&D.

2. Able to measure the impact of the outcomes of R&D on the economic and productive performance of growers.

3. Able to identify how close (or far away) the Australian industry is from international best practice in banana production.

Each participant grower is provided with a detailed economic, financial and productive performance profile of their business, and how it compares with other growers. This information is provided across a large number of key performance indicators ("KPI's") in numerical and graphical formats. Each grower is provided with large number of qualitative reports, which are compilations of each individual grower's response to a series of questions asked by CDIPM.

Each grower is anonymous to all the other participant growers in order to provide commercial confidentiality.

The participants to this project represent 30.8% of the estimated area of banana production across Australia in 2010, based on an ABGC estimated area of production of 11,000ha.

As stated previously this project builds on the benchmarking report from BA09037, which was completed in mid-2011 by CDIPM. The Australian banana industry had undertaken 2 prior benchmarking studies, both of which varied considerably in methodology, factors which CDIPM consider contributed to neither project having any ongoing success. The KPI's investigated were significantly different from those compiled in this study. Neither previous study involved the compilation of database software which allows for benchmarking analysis beyond one year.

This project is similar in approach to other benchmarking projects undertaken in the dairying, grain, beef and chicken production sectors. Some of these projects have operated for over 40 years. Growers and industry have continued these projects in order to continually seek to improve a grower's business performance.

Materials and Methods

This project involved 2 distinct series of activities, data collection, data analysis and reporting. The approach undertaken to complete these activities is detailed in the following sections.

Data Collection Function – General

The approach undertaken by CDIPM for the collection of data from each of the grower contributors was as follows:

1. Each of the 46 growers who participated in the BA09037 were approached by phone and email to invite participation in this project. A total of 40 growers agreed. There were a variety of reasons given by the 6 growers who did not wish to participate in this project. They included: sold their business (2), no time to participate due to impacts of Cyclone Yasi (3), did not see the benefit of participating again (1).

2. A total of 7 new growers approached CDIPM to be participants in this project following a presentation at the ABGC Congress held in June, 2011 or alternatively at presentations made in regional areas of the findings from Round 1.

3. The remaining 12 new growers were identified through the existing 'touchstone' network established in Round I. These touchstones were familiar with the growers in each of the major regions, their approximate business size and potential willingness to contribute. The database of growers who have contributed to this study remain confidential to CDIPM.

4. The sampling methodology utilized was a mixture of grower numbers versus production volumes. We are satisfied with respect to the numbers of growers involved. There is a wide variation of business size. Without having any objective data regarding business sizes we have used a best approximation to select the number of growers in each size range, based on consultation with growers and industry liaison persons located in the regions. The new growers who came into this project were located in North Queensland = 15, NSW =3 and Western Australia = 1.

5. Therefore, when we consider all of the project participants, the number and location of the growers included in the study were: NSW = 7, Carnarvon = 3, North Queensland = 49 (includes Kennedy, Tully, Mission Beach, Innisfail, Palmerston and Atherton Tablelands). All major production regions have had growers included.

6. Each new grower was initially contacted by telephone, where CDIPM discussed:

    a. The purpose and goals of the project.

    b. The data collection methodology including the key data areas for which information would be required.

    c. The experience of CDIPM in undertaking similar projects.

    d. The previous experience of the Project Leader in working with growers and how the results from Round I are anticipated to benefit those growers in future.

    e. Responses to questions that the grower had about the project.

    f. If the grower required further information, this was provided by a follow up email which confirmed in writing the information to be supplied as well as providing examples of outputs generated from previous projects.

Growers expressed a willingness to be a project participant, requested additional information, or indicated that they needed to discuss the project with other family or business partners before responding. Only 2 growers who were approached declined to be a participant in Round II.

7. An appointment was scheduled to undertake a face-to-face consultation for each new grower willing to be a participant. Growers were sent an email in advance with a information list of formation that they may have to source rather than provide from memory. Most particularly, the information requested in 'advance' included a copy of their Profit & Loss statements (with explanatory notes), Harvest statistics, the total number of hours worked by employees for the 09/10 year. Each grower was also supplied a spreadsheet requesting plantation information (block areas, planting dates, planting materials, plant spacings, irrigation types etc) in advance.

8. There were a total of 11 core areas to the data collection (and subsequent data analysis) for the project. For each of the 11 areas, there were a number of questions and information requested either by way of direct questions or requests for the provision of historical information. The 11 key areas were:

    a. Grower details – business name, address details and contact points.

    b. Employment information

    c. Human resource management

    d. Property information

    e. Production details

        - Site preparation
        - Plant and sucker management
        - Irrigation and fertiliser
        - Pest and disease
        - Bell emergence and bagging
        - Bunch management

    f. Harvest details

    g. Packing operations information

        - Own packing (pack own fruit only)
            - Pre-packing
            - Packing
            - Post-packing
            - Transportation
            - QA
        - Own packing (pack own & other fruit)

- Pre-packing
- Packing
- Post-packing
- Transportation
- QA
- Own & contract packing

- All contract packed

h. Harvest statistics

i. Data management

j. Marketing information

- Customer
- Sales

k. Financial (detailed breakdown of growers' Profit & Loss).

9. At the interview, to each grower a series of questions were asked (see copy of Banana BM for details). If the grower did not have the information available, a follow up email was sent. This email may also contain points of clarification on data provided as the interviews were 'tidied' up by CDIPM soon after the meeting. Data for the most part was directly entered into BananaBM during the interview. In Round I, there were 10 key areas with the new area being Human Resource Management. Within a number of the existing key areas there was an expanded array of questions on which data was collected. This was in response to 'gaps' identified during the management of Round I. These additional information areas pertained most specifically to Marketing information, Production details and Packing rates.

10. For existing growers, growers were initially contacted by email or phone to invite participation. Growers who agreed to participate were then provided with a copy of the Data Reports from 08/09 which detailed all of the information that they provided, as a reference document. CDIPM then arranged an appropriate time for a telephone interview with each grower to identify any changes to the operational practices between 08/09 and 09/10. Growers were also requested to provide their responses to the additional information areas as discussed in (10) above.

11. For many growers there were a number of communications (fax, phone and email) in order to gather complete the Data File.

12. Once, the Data File was complete, a copy was sent to each grower requesting them to read through the documents and to provide any changes that they wish to make in order to provide a more accurate representation of their business.

A screen shot of BananaBM data entry screen is provided in Figure 1.

Figure 1: BananaBM Data Entry Screen

Data Collection Function – Financial

A core element of this benchmarking study was the detailed analysis of the Profit & Loss statements of the each contributing grower. Each grower supplied a copy of their Profit & Loss statement or Cashbook for project analysis prior to analysis by their accountant. CDIPM spent considerable time with each grower to understand the nature of the entries and to ensure that the financial statements used represented the true financial performance of each business.

In order to ensure that each business was being evaluated on an equal footing, every grower and family member who were active contributors to the business were paid a wage and superannuation equivalent to the estimated salary if employed by a business owner to perform the same role. A number of growers who were paying themselves a wage had those amounts 'backed out' of the financials and a standard salary package applied. The manager's wage varied from $60k per annum for a smaller sized business up to $120k per annum for businesses with turnovers over $5 million per annum. Family members who were not managers were 'paid' a salary of $50k per annum per full time equivalent (FTE). For family workers such as sons and daughters who simply worked in the business and were paid a wage by the owners, they were treated as workers and not owners.

Data Analysis and Reporting Function

BananaBM contains 10 main separate reporting functions. These are:

1. Single Grower Data Summaries. Once a grower has supplied all of their information each grower is provided with a copy of their own individual data summary. The grower is then asked to review the data so any amendments or errors can be corrected. Further the grower then has a record of the information that they have provided to CDIPM each year of the project.

2. KPI Reports. This includes 2 main types:

    a. Single Grower – Comparative Other Growers. This enables an individual grower's financial and non-financial KPI results (2 separate reports) to be compared against all

or a selection of other contributing growers for a particular data year. For each KPI 'line' the report shows the growers KPI value, the minimum and maximum for that KPI, the average and where relevant the growers rank against the selected growers. For all KPI's a rank of one equates to being the 'best' for that KPI.

b. Industry. This enables CDIPM to print out the KPI average results for all or a selection of growers. These results are presented as 2 separate reports, financial and non-financial. For each KPI, this report shows the average value and the minimum and maximum value for that KPI.

c. Multiple Year. These reports allow an individual grower to receive their values for a particular KPI for each year that they are a participant. For this project, the maximum number of years which can be reported up is 2.

3. KPI Charting. This is a function that permits the development of a graph for any selection of growers for a broad range of financial and non-financial KPI's. Each grower's identity is protected via an identification number (ID) which is known only to them.

    a. Chart Builder. Permits the program user to build new charts as required. This element of the program is used to develop graphs for inclusion into the other 3 sections of the KPI Charting menu system.

    b. Multiple Growers. This enables CDIPM to develop graphs for selected growers for a range of KPI's in sub menus including financial, productivity and property information.

    c. Single Grower. Develops a graph for an individual grower to demonstrate the various split of carton sizes packed by the grower for a single year.

    d. Industry. This enables CDIPM to develop industry graphs across a broad selection of KPI's in the sub menu areas of financial, employment, production, property information and marketing.

4. Qualitative Benchmarking Reports. For a selection of growers, the qualitative benchmark reports provide the responses of every grower to an extensive series of questions relating to the production, packing and marketing of bananas for a single year. Each grower's identity is protected via an identification number (ID) which is known only to them.

5. Bulk Reports. This is a function that allows for the rapid development of individual and industry reports for presentation to relevant parties.

An additional menu item, Generate KPI's, is used to recalculate all KPI's when new data has been entered. It is necessary to Generate KPI's, prior to the development of any new reports.

A screen shot of BananaBM report selection menu screen is provided in Figure 2.

Figure 2: BananaBM Report Selection Screen

Detailed Methodology

The agreed core elements of the project methodology as per the original proposal are listed below:

Step 1: Scope, Process & Engagement ("Getting Started")

- Agree on the project scope and the methods of working with the Project Management Committee ("PMC"). Discuss and achieve consensus on any adjustments/amendments to the project methodology to be made from the Round I project ("otherwise known as BA09037) (This project being referred to as Round II).
- Identify reporting, interaction steps, timings and key contacts for the management of the project with the PMC.
- Discuss and agree any additional areas requiring data collection with the PMC. For example, in this project CDIPM will explore the development of indices relating to human resource management skills and marketing skills and awareness of growers.
- Adjust sampling methodology if requested from the current proposal of having 13 new growers in Queensland, 5 in NSW and 2 in WA.
- Discuss and agree on industry involvement / notification of the project. CDIPM recommends that each grower receive notification via industry newsletter or fax stream of the project and inviting participation.

Step 2: Data Collection (external communication)

- Email or telephone each grower contributor from Round I to confirm willingness to participate in the Round II project.
- Email or mail to each grower a copy of their data report from Round I to be used as a source document for Round II.

- Request each grower to provide a copy of their 09/10 Profit & Loss statement, harvest statistics (x package size, total hours worked by employees and family members to be supplied by email or fax).

Step 3: Data Collection & Input from Round I Growers

- Arrange a telephone appointment time with each grower to collect data pertaining to the 09/10 financial year and identify any changes to business operations as per the responses received in Round 1. Understand and discuss the contents of any documents supplied (from Step 2) so as to achieve harmonisation in the terminologies used and numerical data supplied.

- Follow up each grower with an email or phone calls following the telephone interview to collect any outstanding information or to clarify any issues associated with the data.

- Enter all data received into Banana BM (the benchmarking software program) for the 09/10 year for all participant growers.

Step 4: Data Collection and Input from Round II Growers (new)

- Each grower to receive notification via industry newsletter or fax of the existence of the project and inviting participation via existing communication banana grower industry channels.

- Contact growers who attended industry presentations as part of the Round I communication strategy to confirm their wish to be included in Round II of the project.

- Via touchstones established from Project I identify any additional growers who may be willing to be participate in the project to achieve the desired sampling methodology of 13 new growers in Qld, 5 in NSW and 2 in WA.

- Contact potential project contributors to discuss the objectives of the project, outline the types of information required, time contributions expected from the grower and the general project methodology. If necessary, CDIPM may provide an email or fax of the information requirements including some indicative grower reports in order to allow growers to better understand the objectives and outputs of the project including potential benefits to them as growers. At this point growers will either agree or not agree to become project contributors.

- Co-ordinate meeting program in Queensland and New South Wales as one-on-one interviews and in Western Australia via electronic means.

- Follow-up discussions with grower interviewees for gaps / information missing following from the initial one-on-one interviews. The information gaps will we anticipate be filled via telephone, email and / or fax. These gaps may involve a number of cycles of going back to the growers to clarify or seek additional information.

- Enter all data received into Banana BM (the benchmarking software program) for the 09/10 year for all participant growers.

Step 5: Software Development

- Undertake any re-programming required of Banana BM to allow the calculation of any qualitative and quantitative benchmarking reports using the same existing format.

- Complete development of a Users Guide for the operation of Banana BM.

Step 6: Data Reports to Grower for Verification

- Supply each grower a copy of their own Data Report for verification of the accuracy of the information supplied by each grower.

- Make any amendments / changes to each growers data file as requested.

Step 7: Supply Individual Growers Benchmarking Reports

Provide to each grower a CD containing:

1. Their own financial benchmarking report

2. Their own non-financial benchmarking report.

3. Graphs for key selected financial and non-financial KPI's.

4. Qualitative benchmarking report outlining responses to questions received from all participant growers.

5. Industry financial benchmarking reports.

6. Industry non-financial benchmarking reports.

Step 8: Communication of Project Findings

- Each contributing grower will be provided with a hard copy of their own individual benchmarking data, comparisons with all growers (KPI and qualitative data) and also with 'like' growers as per Step 7.

- Industry benchmarking data, as determined appropriate to be supplied to growers other than those who were contributors, will be made available through articles and report extracts as per the ABGC website.

- CDIPM will liaise with ABGC to present benchmarking findings to growers via a minimum of 6 meetings (3 in North Qld, 2 in NSW and one in WA). The WA meeting will be conducted remotely. The timing and location of these meetings are to be agreed by the PMC and ABGC in consultation with CDIPM. Ideally, communication of these findings will be done in conjunction with other activities in order to maximise the number of growers who may attend.

Step 9: Completion of Draft Report

- Compile a draft report outlining in detail the project methodology but with a strong focus to reporting on the industry KPI's, their results and implications for industry.

- Using the results of the Benchmarking and KPI study and feedback resulting from the consultation phase, develop a series of recommendations pertaining to strategies aimed at improving industry performance through both the development of industry strategies and strategies for individual businesses which may be delivered via industry organisations / providers going forward into the future.

- Draft Report to be supplied to HAL for consideration.

Step 10: Completion of Final Report

- The Final Report is circulated to HAL and the PMC for distribution as deemed appropriate.

- Deliver report/s in the formats and numbers as defined by HAL and / or ABGC.

It should be noted that the ordering of Steps 8-10 were changed during the course of the project. As a result of discussions between the ABGC, HAL and CDIPM it was agreed that their needed to be consensus amongst all parties prior to the results of the project being communicated to industry. Therefore the draft report needed to be completed prior to a consultation between each of the aforementioned parties prior to the communication strategy being undertaken. Further, due to the fact

that the Draft Report was not completed until December and the preferred communication method being via shed and industry association meetings the communication strategy could not be undertaken until late January / early February, 2012 as both growers are traditionally absent during the Christmas period and that there are no association meetings traditionally scheduled in December and January. Therefore the communication strategy was agreed upon after the supply of the Draft Report and immediately prior to the submission of the Final Report.

Results

The reporting of project results from BA09037 has been broken up into a number of sections, for ease of reading and understanding. These sections are:

1. Sampling and Grower Reporting
2. Industry Financial Performance
    a. Queensland Cavendish Growers
    b. Sub Tropical Growers
    c. Lady Finger Growers
3. Industry Financial Performance – Costs
4. Statistical Correlations
5. Non-Financial Key Performance Indicators
6. Qualitative Reporting
7. Human Resource Management
8. Comparisons between the Top 10 growers and the remainder

This project has generated an extensive volume of data relating to the financial and productive performance of growers. Further the quantity of information gathered regarding the production, packing, marketing and human resource management practices of growers is enormous. It is not the intention of this report to present the results of every single output from the project. However, the Results and subsequent Discussion sections will present the findings of the major findings from the project. The project findings as presented to each of the individual grower contributors will be made available by way of a CD. Some elements of this information will also be included in Appendices at the end of this report.

Sampling and Grower Reporting

This report presents the findings for a total of 59 banana growers, located in Queensland, NSW and Western Australia. Table 1 shows the location of the grower contributors and the number of growers who fit into 4 size ranges based on the cartons packed in 2009/10. The table shows a good distribution of business sizes. The larger number of smaller sized businesses we believe is indicative of the nature of the industry. However in the absence of any verifiable data this assertion cannot be tested.

Of the 59 contributors to the study, 40 of these growers were participants in the Round 1 project.

Table 1: Size and Location of Contributing Growers

Location	<50k cartons	50k-<75k cartons	75k-<150k cartons	>150k cartons
Atherton Tablelands	4	1	1	1
Innisfail	7	6	10	3
Tully / Mission Beach	3	4	-	7
Kennedy Valley	-	1	-	1

Location	<50k cartons	50k-<75k cartons	75k-<150k cartons	>150k cartons
Far Northern NSW	3	-	-	-
Northern NSW	4	-	-	-
Carnarvon	3	-	-	-
Total	**24**	**12**	**11**	**12**

Table 2 shows the number of growers from each state and their varietal mix.

Table 2: Grower Contributors Location and Variety/ies Grown

Location	Cavendish only	Lady Finger only	Cavendish & Lady Finger
Queensland	41	4	4
New South Wales	4	-	3
Western Australia	3	-	-
Total	**48**	**4**	**7**

For the purposes of this report the Results and Discussions sections will be focussed, where appropriate, on analysing data from 3 principal groups namely:

1. **Queensland Cavendish growers (41 Cavendish + 2 predominately Cavendish growers) hereinto referred to as the "QC group";**
2. **NSW / WA Cavendish growers (who may be referred as sub-tropical growers) (7 in group + 3 predominately Cavendish growers) hereinto referred to as the "ST group" and;**
3. **Lady Finger growers where that variety is the principal one grown by the grower (4 Lady Finger only growers + 2 predominately Lady Finger grower in Queensland in group) hereinto referred to as the "LF group".**

Readers should be aware that with only 6 growers in the LF group that caution should be exercised as the sample size is very small and so general conclusions or assumptions may not be accurate. Further there is one grower who comparatively had a very poor financial performance which will have an impact on the financial results. In some areas of this report this particular grower has been removed from calculations.

Each grower contributor to the project receives the following reports as described in Table 3. We have included either an example or an actual report in the appendices for reference. Further discussion on the contents of each report will be in subsequent portions of the Results and Discussion sections.

Table 3: List of Reports Supplied to Each Contributing Grower

No.	Report Name	Description	Location of Example
1	Individual Grower Benchmarking Report (Financial)	Individual growers financial benchmarking data compared with selected other growers. Grower supplied with a listing of the KPI's, its value, the minimum and maxiumum of the KPI for the selected group, the selected group average KPI value and that growers position or ranking within the selected group. A grower will receive a report comparing their performance against the 58 growers (whole sample) and another report comparing them against growers in the same location (ie.	Appendix 1

No.	Report Name	Description	Location of Example
		Queensland or NSW / WA combined) and of the same variety. The second report will provide for more relevant business comparisons. An example of a report is provided in Appendix 1 with the identity of the grower removed. However, individual financial reports are not provided as an adjunct to this report due to grower confidentiality.	
2	Individual Grower Benchmarking Report (Non-Financial)	Individual growers **non-**financial benchmarking data compared with selected other growers. Grower supplied with a listing of the KPI's, the value, the minimum and maxiumum of the KPI for the selected group, the selected group average KPI value and that grower's position or ranking within the selected group. An example of a report is provided in Appendix 2 with the identity of the grower removed. However, individual financial reports are not provided as an adjunct to this report due to grower confidentiality.	Appendix 2
3	All Growers / Industry Group Benchmarking Report (Financial)	For a selected group of growers, the report shows the financial KPI measured, the minimum and maximum value (where appropriate) for the selected group and the selected group average KPI value. Two copies of this report are provided. One showing the results for all growers and the other for the specific production group that the grower is a part of. An electronic copy of these reports have been provided as an adjunct to this report.	Appendix 3
4	All Growers / Industry Group Benchmarking Report (Non-Financial)	For a selected group of growers, the report shows the non-financial KPI measured, the minimum and maximum value (where appropriate) for the selected group and the selected group average KPI value. Two copies of this report are provided. One showing the results for all growers and the other for the specific production group that the grower is a part of. An electronic copy of these reports have been provided as an adjunct to this report.	Appendix 4
5	Individual Grower – Comparative Year Reports	A total of 40 growers have received a report which shows their individual KPI indicator values for the 2 years that they have contributed data to the study. The other 19 growers have only contributed one year of data. However, every grower will receive a comparative report. The 19 growers who have contributed one year will have null values for the 2008/09 year. An example of a report is provided in Appendix 5. However, individual financial reports are not provided as an adjunct to this report due to grower confidentiality.	Appendix 5 & 6
6	List of Financial and Non-Financial All Growers & Selected Grower Groups	Shows in graphical format KPI values for the industry group or selected growers in electronic format. Each report shows shows the response provided by each grower to a wide range of questions relating to the production, packing, human resource management and marketing. An electronic copy of these reports have been provided as an adjunct to this report. A list of the reports generated is provided in Appendix 7.	Appendix 7
7	All Growers - Qualitative Reports	Shows qualitative reports provided to growers in electronic format. Each report shows shows the response provided by each grower to a wide range of questions relating to the production, packing, human resource management and marketing. An electronic copy of these reports have been provided as an adjunct to this report. A list of the reports generated is provided in Appendix 7.	Appendix 8
8	Example of	For a selected group of growers, the report shows the	Appendix 9

No.	Report Name	Description	Location of Example
	Qualitative Report	qualitative information supplied by the grower sample to questions relating to production, packing and marketing.	

Table 4 provides a summary of the reports provided to growers depending on whether they are Year 2 growers only or Year 1 and 2 growers.

Table 4: List and Quantity of Reports Provided to Year 2 and Year 1 & 2 Growers

No.	Report Name	Year 1 & 2 Grower	Year 2 only Grower
1	Individual Grower Benchmarking Report (Financial)	√ 2 reports	√ 2 reports
2	Individual Grower Benchmarking Report (Non-Financial)	√ 2 reports	√ 2 reports
3	All Growers / Industry Group Benchmarking Report (Financial)	√ 2 reports	√ 2 reports
4	All Growers / Industry Group Benchmarking Report (Non-Financial)	√ 2 reports	√ 2 reports
5	Individual Grower – Comparative Year Reports	√ 1 report	√ 1 report (No 08/09 data)
6	Charts – Industry (Financial)	√ 1 report (multiple graphs)	√ 1 report (multiple graphs)
7	Charts – Industry (Non-Financial)	√ 1 report (multiple graphs)	√ 1 report (multiple graphs)
8	All Growers - Qualitative Reports	√ 1 report	√ 1 report

Specific points of note to consider when reading reports

1. Each grower contributor is assigned a Grower ID number. The identity of each grower and their particular Grower ID is only known to CDIPM and the grower. This approach has been used so as to preserve the confidentiality of each grower's information to other growers and others. In a number of instances it has been observed that growers have made freely known their participation in the project. CDIPM considers however that this is up to the grower to make this decision and not the project managers.

2. Where a growers performance (financial or non-financial) is compared with other growers using a KPI a ranking system is used to evaluate the position that grower has when compared with his or her peers. For example, a grower may have a rank of 6 of 59 growers. Therefore that grower has the 6th best performance on that particular KPI. A grower who has a rank of 1st has the best performance on that particular KPI and a grower who has a rank of 59th has the worst performance in relation to that KPI.

3. For each business, CDIPM included a wages provision for every business owner inclusive of superannuation commensurate with the size of the business. If a grower's financials included an abnormal payment in terms of wages or superannuation, these amounts were 'backed out' of the financials and replaced with the 'standard' owner's salary. This approach is undertaken for 2 reasons. Firstly, by treating each business in a standard way in respect of payments to owners' comparisons more accurate comparison are able to be made between businesses. Secondly, the financial returns, e.g. net profit margins indicate the true financial performance of the businesses as financial advisors etc would wish to assess the business. The range of salary for the farm manager was $60k-$150k per annum with a 9% loading provision for superannuation. Other family members who are owners of the business are remunerated at $50k per annum unless they form a dual management team.

4. There are also a number of instances where a grower is provided with an index rating. For example, "Overall Human Resource Management Skills" has a ranking score of 1 to 10. For this KPI a score of 10 indicates a excellent score in terms of human resource management skilling and a score of 1 a very poor rating. Growers who have a ranking of 0 were not assessed in relation to that particular KPI. For example, a grower who does not employ labour will not be assessed on certain human resource management indices.

5. Growers when discussing returns per carton use either of 2 terms, with 1 being interchanged wrongly with the other. For the purposes of this report the "gross banana sales" refers to the price paid by a purchaser for a carton of bananas. There are no deductions made from the growers' return, such as marketing fees and commissions or ripening and handling fees. However where growers are transacting on a merchant basis these costs are unknown as they have already been 'deducted' from the price quoted back to the growers. Therefore for the purposes of harmonisation of language and numeracy, this report is going to refer to net sales per carton (or planted ha), where net sales is the price paid to a grower after all marketing fees and commissions and ripening and handling fees have been deducted, if in actual a fact the grower has these figures deducted. In summary:

   Net sales per carton = Total banana sales income – [marketing fees & commissions + ripening & handling fees] divided by the total number of cartons packed.

   This term should not be confused with the "Net farm gate return per carton" which also has transport fees and levies deducted in the addition to marketing fees and commissions and ripening and handling fees. Growers do not refer or mean to use this term generally.

6. For 2009/10 there are 2 farms which were not able to provide financial data due to the fact that the data was too aggregated to be able to be used. Their qualitative and production information has been included. Any KPI's involving financial calculations therefore will involve a maximum of 57 growers.

7. The average per carton average commission and marketing fees and ripening & handling fees are not true indications of the industry average charge for these off-farm cost items. Growers when they receive a return may or may not be shown the costs deducted by the marketer from their returns. This is always the case if the wholesaler is trading as a merchant. However for the purposes of grower understanding, the grower returns and costs breakdown for all 57 growers in 2009/10 are shown below in Table 8.

Table 5: All Growers Returns and Costs Breakdown

Item	Comments	Average 2009/10
Average net banana sales per carton ($/carton)	This is the average net return from banana sales and after commission & marketing fees and ripening & handling fees have been deducted. Often referred to by growers as the farm gate return. Growers will typically not deduct freight & levies from these returns	$21.06
+ average commission & marketing fees (from this study of all growers)($/carton)	This is the average per carton cost for all growers even though not all growers have this deduction line.	$0.82
+ average ripening & handling fees ($/carton)	This is the average per carton cost for all growers even though not all growers have this deduction line.	$0.30
+ non-farm income ($/carton)		$0.32
Average 'nominal' gross sales return ($/carton)	This figure **SHOULD NOT** be confused with the real gross sales return which	**$22.50**

Item	Comments	Average 2009/10
	is shown in Table 11.	
'- total cost of production ($/carton)		$20.84
Net profit per carton	**As shown in Table 6 below**	**$1.64**

Financial Performance – All Growers

Summary Financial Performance

Table 6 demonstrates the comparative financial performance by 46 growers in 2008/09 and 57 growers in 2009/10.

Table 6: Summary Financial Performance of All Growers in 2008/09 and 2009/10

KPI Name	Average 2008/09	Average 2009/10
Average banana sales per planted ha ($/ha)*	$42,445	$44,771
Average net banana sales per carton ($/carton)*	$19.78	$21.06
Average banana sales of total banana area ($/ha)*	$39,675	$42,603
Average cost of goods sold ($)	$1,847,870	$2,053,306
Average COGS per planted ha ($/ha)	$37,756	$39,012
Average COGS per ha of total banana area ($/ha)	$35,292	$37,122
Average business gross profit ($)	$374,572	$463,165
Average gross profit per planted ha ($/ha)	$7,653	$8,800
Average gross profit per ha of total banana area ($/ha)	$7,154	$8,374
Average gross profit per carton ($/carton)	$3.57	$4.11
Average gross profit margin (%)	16.9%	18.4%
Average business expenses ($)	$207,867	$278,566
Average expenses per planted ha ($/ha)	$4,247	$5,293
Average expenses per ha of total banana area ($/ha)	$3,970	$5,036
Average business net profit ($)	$166,705	$184,599
Average net profit per planted ha ($/ha)	$3,406	$3,507
Average net profit ha of total banana area ($/ha)	$3,184	$3,337
Average net profit margin (%)	7.5%	7.3%
Net profit per carton ($/carton)	$1.59	$1.65
Total cost per carton ($/carton)	$19.58	$20.84
Average cost per carton excluding commission & ripening fees ($/carton)	$18.59	$19.73

** The figures for 08/09 are not able to be calculated in the same format as for 09/10.*

The key observations from this analysis are:

1. Net profit per carton in 09/10 is 3.8% higher compared with 08/09 at $1.65 per carton (net gain of $0.06 per carton). The factors resulting in the price increase are difficult to identify as the varietal and grower mix is different between the 2 years.

2. Average banana sales per farmed ha (again net of marketing and commission fees and ripening and handling fees) were $44,771 which represents an increase of 5.5% on 2008/09.

3. The average net profit per business (before tax) was $184,599, which is a 10.7% increase on the previous year's result.

4. Net margin however declined from 7.5% to 7.3% which is reflective of the higher average business turnover of the businesses in 2009/10 compared to 2008/09. No provision has been included for income tax in this analysis. An average return of 7.5% in today's economic environment would be considered unacceptable if there is any significant borrowings and hence interest cover required.

5. However, more positively 9 growers had a net profit margin in excess of 20% in 2009/10. These Profit Before Tax ("PBT") figures are indicative of very 'healthy' businesses in economic terms.

6. Average on-farm costs of production increased by 7.5% from $15.10 to $16.23 per carton (or $1.13 carton).

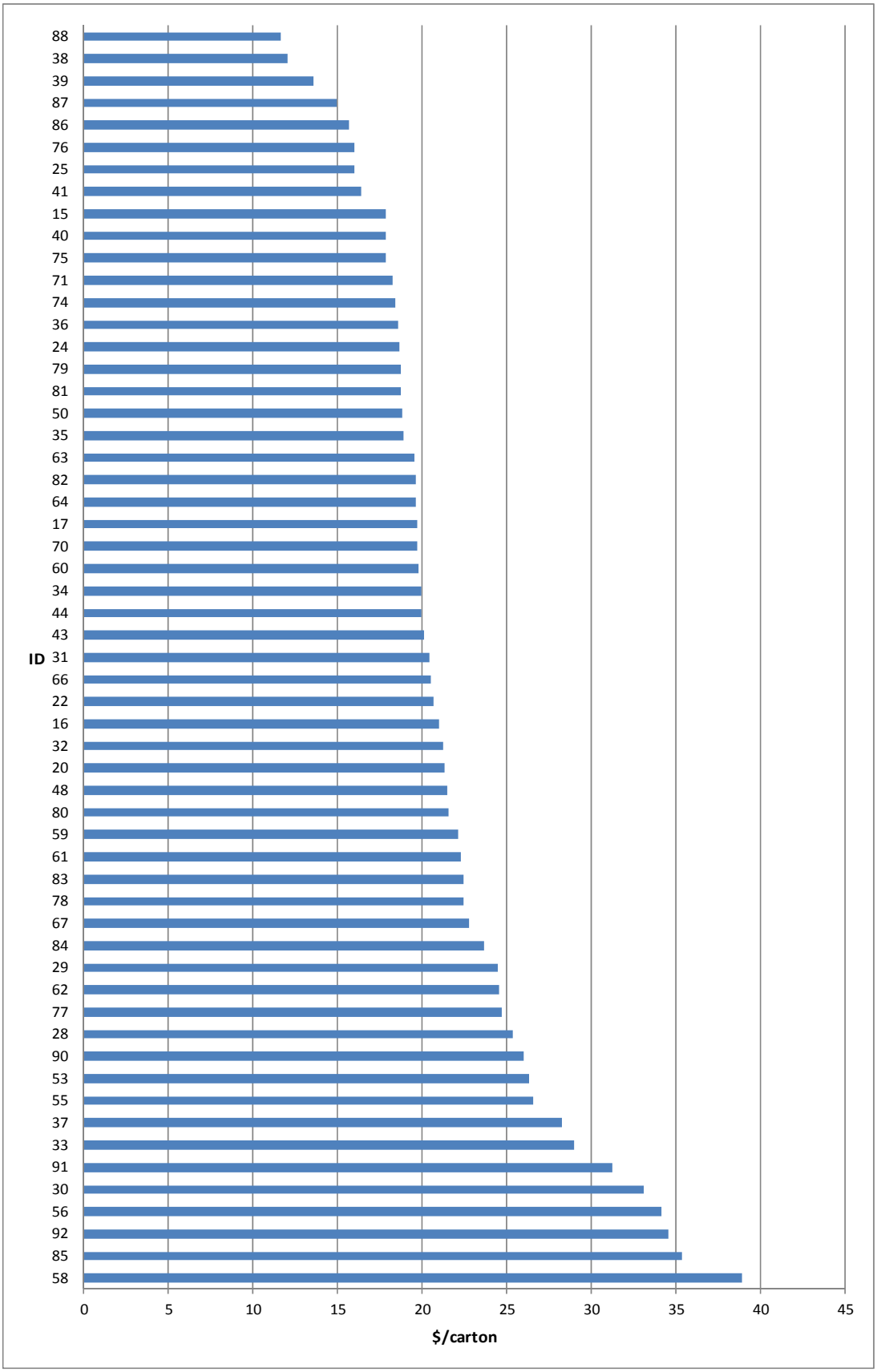
7. The average cost of production, not including marketing fees and commission, ripening and handling fees was $18.59 per carton. Some growers would refer to this as the price that they would need to receive at the 'farm gate' in order to 'break even'. Other growers would consider the breakeven price to be $18.36 approximately if we also deduct a standard $0.23 per carton national industry levy. By comparison, the same cost base was $19.73, which represents an increase of $1.14 per carton. Off-farm costs not included in this cost base, namely transport and levies increased by only $0.01.

8. These statistics show that based on the relative populations of 45 and 57 growers respectively that the cost base for banana growers increased by around 7.5% in the single year from 2008/09 to 2009/10. The net sales per carton increased by slightly more than the cost base at $1.28 per carton. Therefore on the basis of these statistics the respective revenue and cost bases both increased between 2008/09 and 2009/10, but the net effect is that growers remain in relatively the same position in terms of net returns per carton. A slight decrease in yields (0.9%) also assists in bring the net position close to zero.

Net Per Carton Price Returns

Figure 3 demonstrates the variability in net price returns paid to growers in 2009/10. The variability particularly at the 'top end' of prices is due to the fact that these prices are for Lady Finger cartons and organic fruit, which both receive high prices generally. Also the Western Australian growers receive a higher price generally as they value add their product predominately into 750g and 1kg prepacks. At the low price the bottom 5 average prices are for sales made by Sub-Tropical banana growers. In a number of instances their fruit is sold to local customers who offer a lower price because the grower does not have to incur transport costs if sold locally.

Figure 3: Net Price per Carton Return for All Growers, 2009/10



On-Farm Cost Comparison 2008/09 to 2009/10

Table 7 compares the average on-farm costs of production for a 13kg equivalent box of bananas in 2009/10 as compared with 2008/09. The reader should note that the number and mix of growers are different.

Table 7: Comparison between On-Farm Costs of Production for All Growers in 2008/09 and 2009/10

Cost Category	% of On-Farm Costs 2008/09	Cost per Carton ($) 2008/09	% of On-Farm Costs 2009/10	Cost per Carton ($) 2009/10	Differences in Cost per Carton ($) 2009/10
Administration	0.1%	$0.02	0.2%	$0.03	-$0.01
Consultant fees	0.4%	$0.06	0.4%	$0.07	-$0.01
Contract packing	7.4%	$1.12	5.5%	$0.89	$0.23
Contract spraying	0.5%	$0.08	0.7%	$0.12	-$0.04
Electricity and gas	0.9%	$0.13	1.1%	$0.18	-$0.05
D&A*	0.6%	$0.09	1.9%	$0.30	-$0.21
Employment expenses	0.3%	$0.04	0.2%	$0.03	$0.01
Fertiliser and chemicals	11.9%	$1.80	13.8%	$2.24	-$0.44
Field consumables	1.2%	$0.18	1.4%	$0.23	-$0.05
Finance	1.1%	$0.17	1.8%	$0.29	-$0.12
Freight inwards	0.1%	$0.02	0.1%	$0.01	$0.01
Fuel and oil	2.8%	$0.43	2.1%	$0.34	$0.09
Hire of plant and equipment	0.4%	$0.07	0.6%	$0.10	-$0.03
Insurance	0.6%	$0.09	0.4%	$0.07	$0.02
Lease and rental (non-financial)	0.9%	$0.14	0.7%	$0.11	$0.03
Legal and accounting	0.7%	$0.11	0.3%	$0.05	$0.06
Licenses, permits and fees	0.2%	$0.02	0.2%	$0.03	-$0.01
Marketing and promotion (not commissions or marketing fees)	0.2%	$0.03	0.2%	$0.02	$0.01
Miscellaneous	0.2%	$0.03	0.4%	$0.06	-$0.03
Packaging	14.5%	$2.19	12.3%	$1.99	$0.20
Planting materials	0.1%	$0.02	0.6%	$0.10	-$0.08
Rates	0.5%	$0.07	0.4%	$0.07	$0.00
R&M and replacements	5.8%	$0.88	6.9%	$1.12	-$0.24
Soil, leaf and water testing	0.1%	$0.02	0.1%	$0.02	$0.00
Telephone and internet	0.3%	$0.04	0.3%	$0.04	$0.00
Wages (employees) and contract labour services	39.5%	$5.96	40.5%	$6.57	-$0.61
Wages and on costs (owners)**	8.2%	$1.23	6.4%	$1.03	$0.20
Water purchase	0.4%	$0.06	0.6%	$0.09	-$0.03
Total	**100.0%**	**$15.10**	**100.0%**	**$16.23**	**-$1.13**

The reader should be aware that these are average costs and for an individual business the costs do vary considerably. For example, the average cost of packaging of $1.99 per carton is low if a grower packs all of their own fruit. The lower figure may be expected by that type of grower because a percentage of growers in the sample have their fruit contract packed, the cost of which is included in another cost category, that is, contract packing.

The key observations from this analysis are:

1. The on-farm costs of production for a carton of bananas rose 3.8% from 2008/09 to 2009/10.

2. The 2 most significant items that increased the production cost were fertilizer and chemicals and wages for employees and contractor labourers.

3. The $0.44 per carton increase for fertilizers and chemicals is not unexpected because in 2009/10 there was a sharp rise in the price of straight and blended fertilizers. Whether or not the actual volume of fertilizers applied increased or decreased is not able to be determined. Further the 2009/10 year was comparatively wet compared to 2008/09 and so it would be reasonable to assume the frequency and thus volumes of fungicides may also be a contributing factor. There is however a component of this wages cost increase that must relate to a decrease in overall efficiency.

4. Wages for employees and contract labourers increased $0.61 per carton or 10.2%. A portion of the increase would be due to the 2.8% wages increase in the base rate of pay over this period. The remaining increase may be attributable to the larger average size of businesses in 2009/10 compared to 2008/09 with an associated increase in wages costs. This argument is further supported where the wages and on costs paid to owners actually decreased by $0.20 per carton.

5. Both contract packing fees ($0.23) and packaging fees ($0.21) declined. The only valid explanation for this is due to the higher average business size these growers have negotiated between packaging prices. It was also observed a small percentage of growers had actually negotiated for lower carton prices. Countervailing this view is that a number of growers reported using more carton packaging (liners, bags etc) which would increase the packaging costs.

6. Fuel and oil costs decreased by 26.5%.

7. Depreciation and amortisation provisions and finance costs increased by $0.21 and $0.12 per carton.

8. There was limited movement associated with the other cost items.

Top Six On Costs in 2009/10

The top 6 on-cost areas in 2008/09 and 2009/10 represented 87.3% and 85.4% respectively of total on-farm costs as shown in Table 8. Whilst there was relatively little movement in the percentage costs, the higher unit total on-costs of $1.13 per carton resulted in significant price increases in wages (employees) and contract labour services and fertiliser and chemicals. The net impact was a $0.64 increase in on-costs.

Table 8: Comparison of the Top 6 On-Farm Costs for 2008/09 and 2009/10

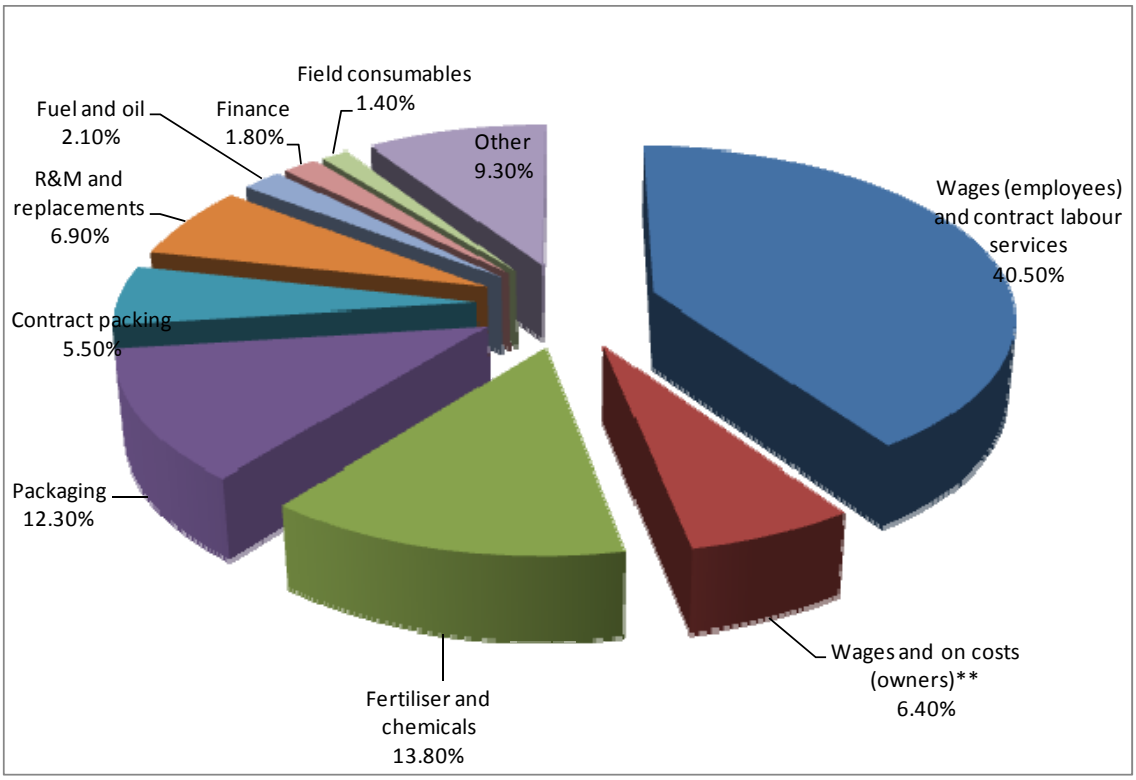
Cost Category	% of On-Farm Costs 2008/09	Cost per Carton ($) 2008/09	% of On-Farm Costs 2009/10	Cost per Carton ($) 2009/10
Wages (employees) and contract labour services	39.5%	$5.96	40.5%	$6.57
Packaging	14.5%	$2.19	12.3%	$1.99

Cost Category	% of On-Farm Costs 2008/09	Cost per Carton ($) 2008/09	% of On-Farm Costs 2009/10	Cost per Carton ($) 2009/10
Fertiliser and chemicals	11.9%	$1.80	13.8%	$2.24
Wages and on costs (owners)	8.2%	$1.23	6.4%	$1.03
Contract packing	7.4%	$1.12	5.5%	$0.89
R&M and replacements	5.8%	$0.88	6.9%	$1.12
Total	**87.3%**	**$13.18**	**85.4%**	**$13.84**

These 6 cost areas represent the most important areas in which a banana grower should focus if they are seeking to reduce on-farm production costs. Most particularly, the growers focus should be on increasing labour use efficiency. There would initially appear limited scope for growers to improve their cost base in terms of packaging and fertilizer and chemical use, although our observations of both areas suggest there is potential for improvement. Lowering repairs and maintenance requires a focus on growers educating workers to better handle machinery and a more dedicated approach to regular servicing and maintenance.

The relative importance of these 6 cost centre's in the costs of production is further exemplified in Figure 4.

Figure 4: % Split of Average Business On-Farm Costs per Carton for Top 10 Cost Centres – 2009/10



Individual Grower Performance in Major Cost Categories

The reader should be cautious in analysing the minimum and maximum values of data ranges as there may be factors not readily identifiable that have contributed to extreme values. For instance, a small grower may not employ any labour and so therefore will have a nil wages costs for employees and contractors.j Or a grower may have had a series of one-off major mechanical breakdowns which

have contributed to a higher average cost of repairs and maintenance, particularly if they are smaller grower.

Table 9 demonstrates the minimum and maximum ranges of individual on costs centres.

Table 9: Top 6 On-Farm Cost Categories for Banana Growers including Minimum & Maximum ($ per carton) in 2009/10

KPI Name	Min	Max	Average
Wages (employees) and contract labour services	$0.00	$25.15	$6.57
Fertiliser and chemicals	$0.21	$5.81	$1.99
Packaging	$0.00	$4.53	$2.24
Wages and on costs (owners)	$0.00	$14.26	$1.03
Contract packing	$0.00	$12.51	$0.89
R&M and replacements	$0.21	$5.81	$1.12
Total			**$13.84**

Given this observation, growers are able to receive a more accurate picture of how their business is performing if they are able to see visually the distribution or spread of individual grower values. Growers are also able to 'ignore' outlier results which are shown in maximum and minimum ranges.

Figure 5 to Figure 8 show the distribution of costs per carton for the top 5 on-farm costs identified in this study. The 4 KPI's are wages (employees) and contract labour services, fertiliser and chemicals, packaging and wages and on costs for the owners.

Figure 5: Wages (employees) and Contract Labour Services for All Growers ($ per carton) – 2009/10

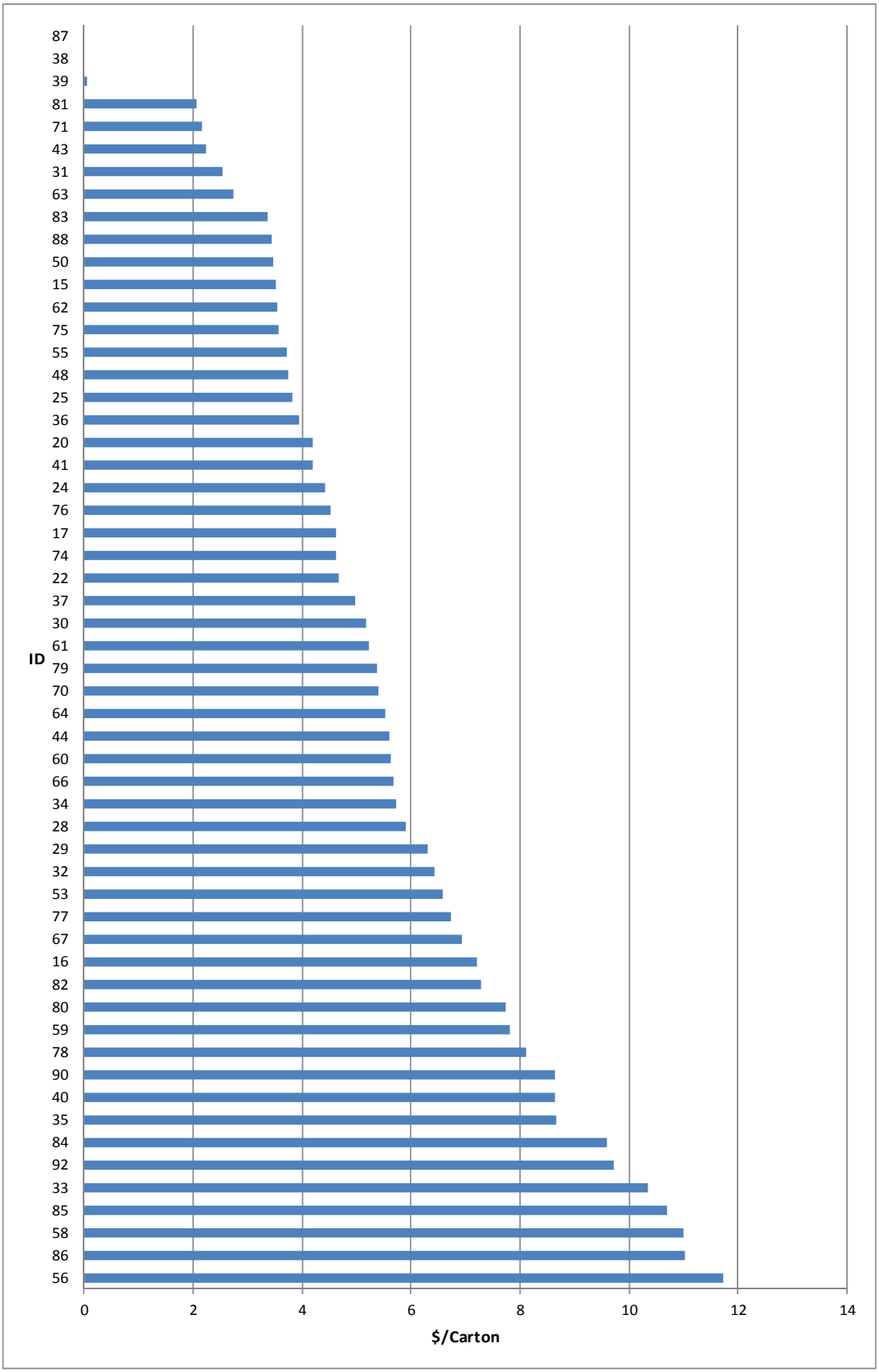


Figure 6: Fertiliser & chemical costs for All Growers ($ per carton) – 2009/10

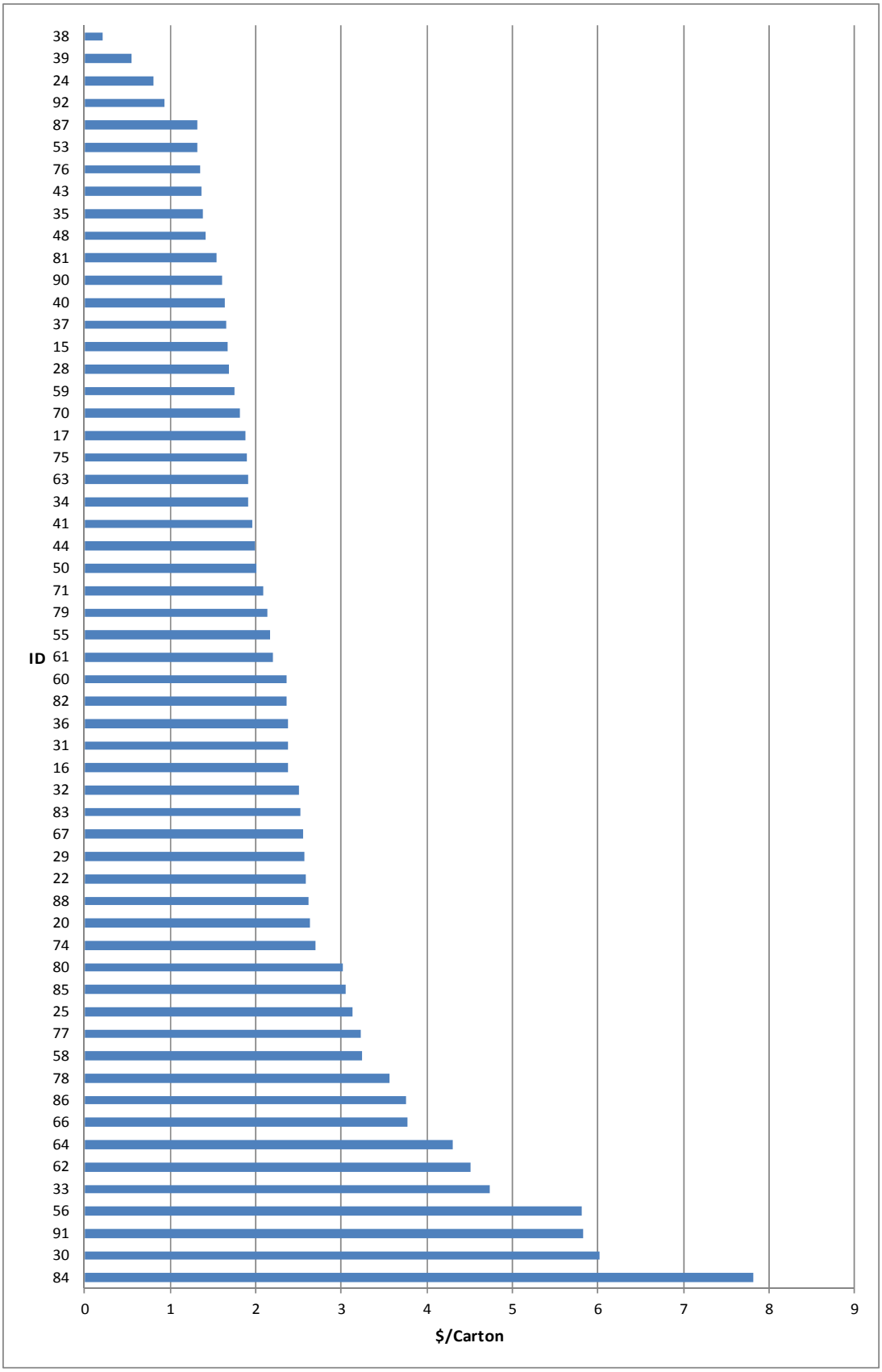


Figure 7: Packaging costs for all Growers ($ per carton) – 2009/10

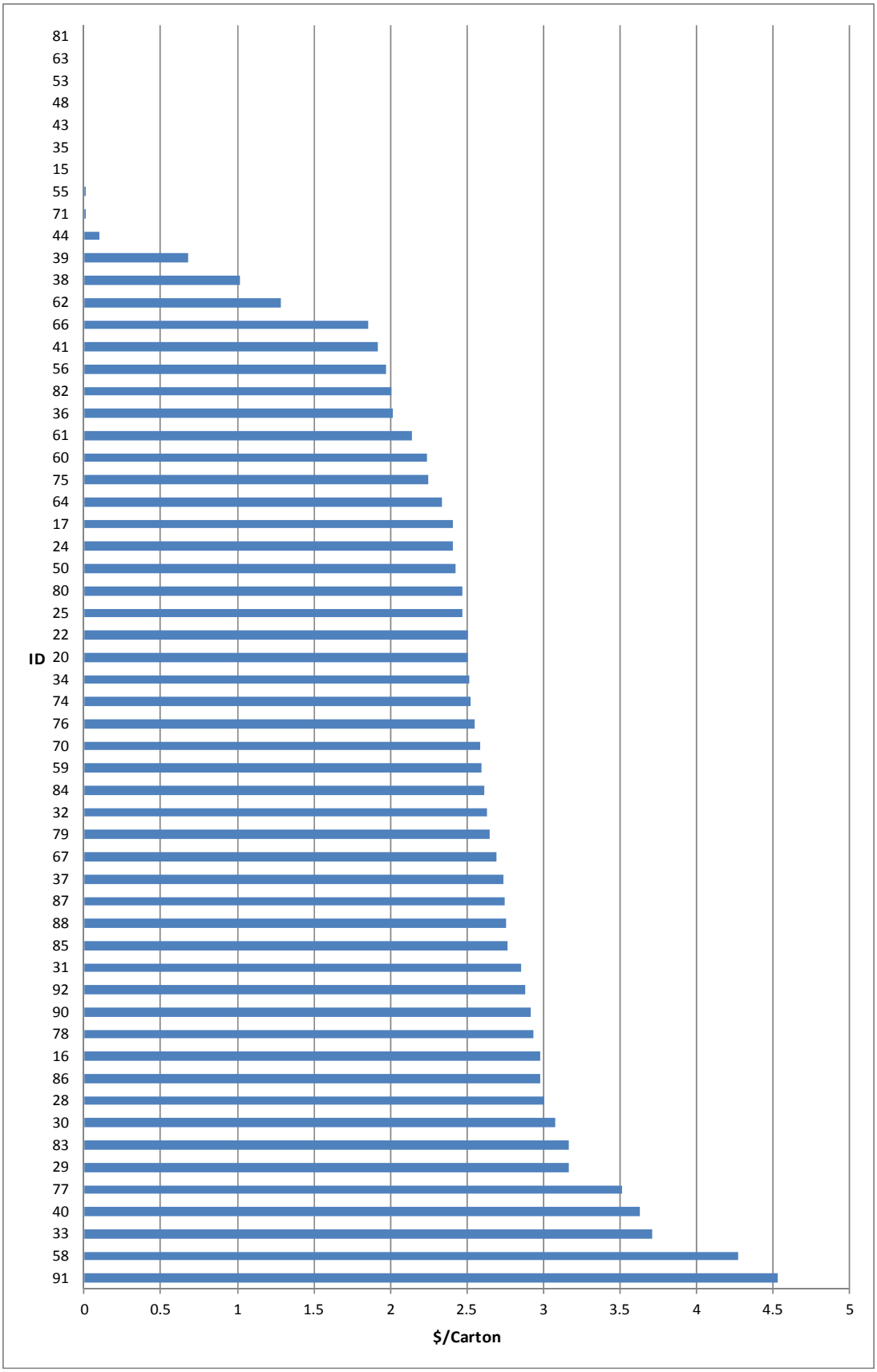


Figure 8: Wages (owners) & on costs for All Growers($ per carton) - 2009/10

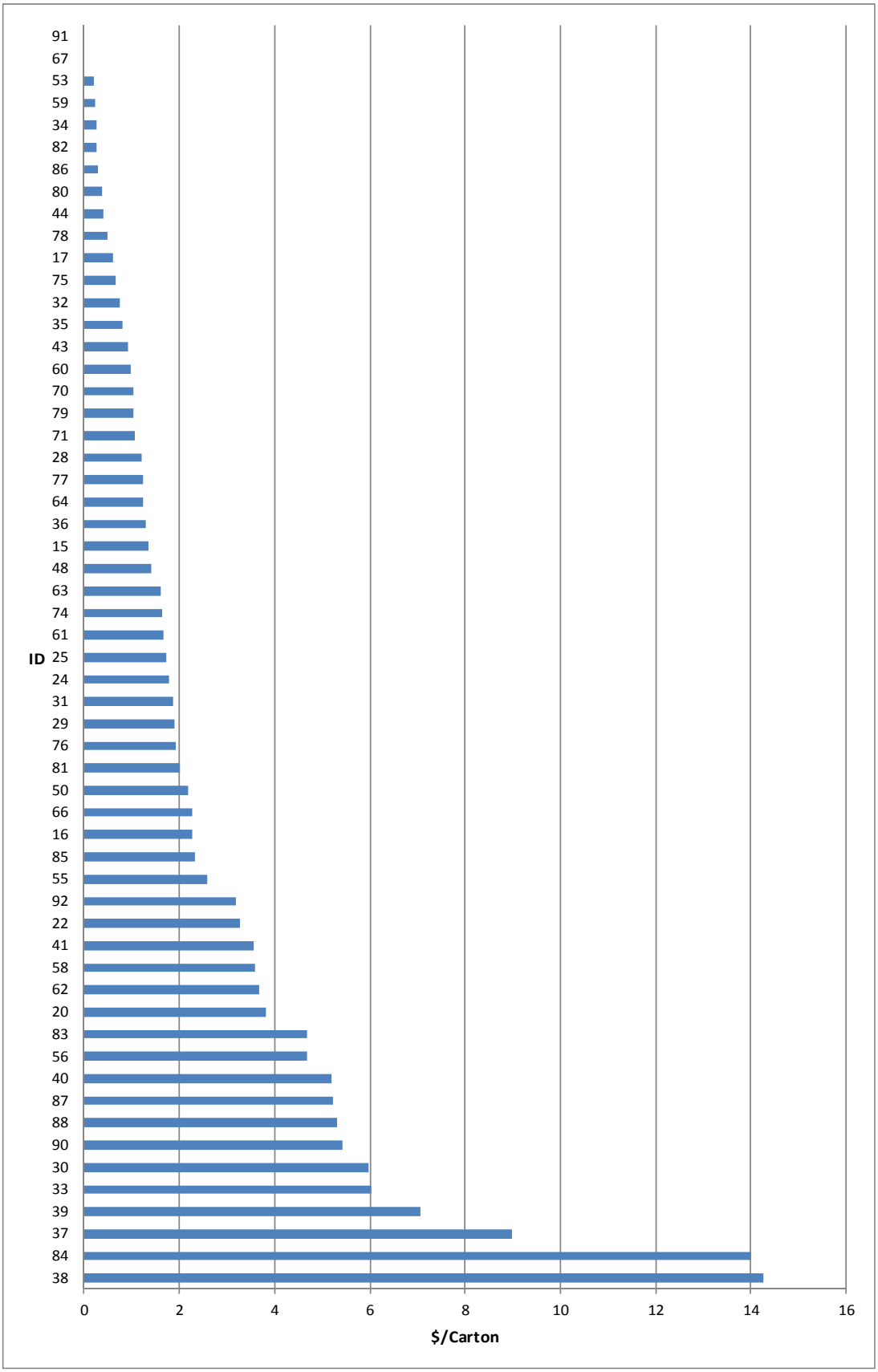


Figure 9: Repairs & Maintenance Costs for All Growers ($ per carton) - 2009/10

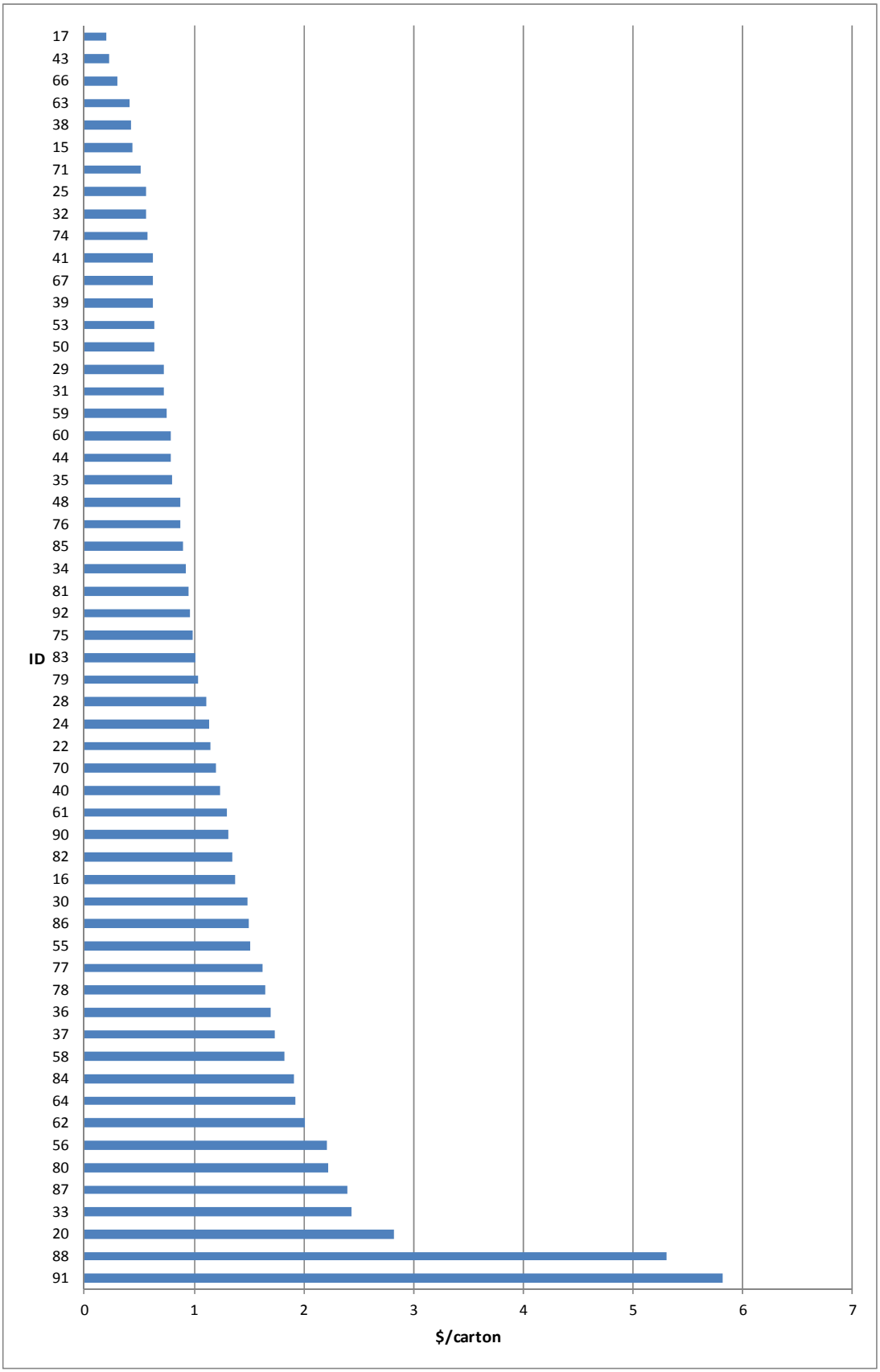
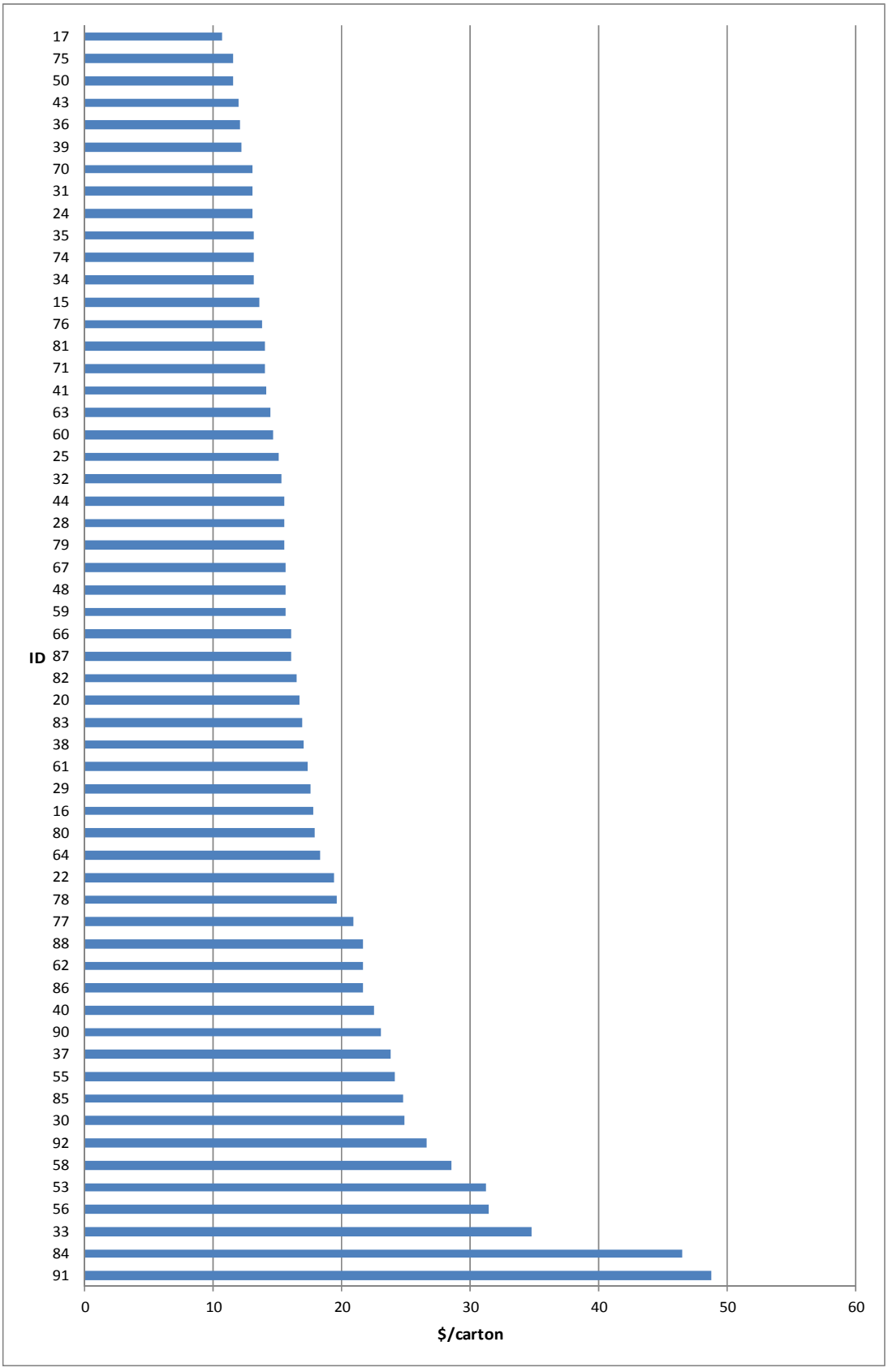


Figure 10: Total On-Costs for All Growers ($ per carton) - 2009/10



The standard deviations for each of the top 5 on-costs and total on-costs are presented in Table 10.

Table 10: Top 5 On Costs and Total On Cost Per Carton Statistical Analysis – 2009/10

On-Cost Type	Average Cost ($/carton)	Standard Deviation	Comments
Wages (employees) and contract labour services	$6.57	$2.02	2 growers excluded due to extreme values. 68% of values between $4.55 and $8.59.
Fertiliser and chemicals	$1.99	$1.42	68% of values between $0.57 and $3.41
Packaging	$2.24	$0.69	10 growers excluded as they have fruit contract packed. 68% of values between $1.55 and $2.93.
Wages and on costs (owners)	$1.03	$2.02	68% of values between $0 and $3.05.
R&M and replacements	$1.12	$1.02	2 growers excluded due to extreme values. 68% of values between $0.10 and $2.14.
Total on costs	$13.84	$7.47	2 growers excluded due to extreme values. 68% of values between $6.37 and $21.31.

These standard deviations and an examination of Figure 5 to Figure 10 show the very high degree of variability between individual businesses in respect of these 5 major on-cost areas. The variation in parts is due to the different varieties being produced, the size of the business, the number of employees (and therefore relative proportion of 'wages' paid to employers or to employees and contractors) and pack sizes in use. An assessment of more 'like' businesses will occur when we examine the 3 groups of growers in subsequent sections. Caution however needs to be expressed in the examination of these figures as samples sizes get smaller.

Cost of Banana Production

In 2009/10 the average on-farm cost for all growers is $16.23 per carton, inclusive of a provision for the value of the owners labour.

However this is not the cost of production for bananas. The cost of transportation, levies, marketing fees and commissions and ripening costs needs to be added to the on-farm cost of production to calculate an accurate average banana production cost. These costs are referred to as off-farm costs in this study.

Based on the sales data received the average net price received by growers was $19.98 per carton. This price is net of marketing fees and commission.

Marketing fees and commissions have been estimated at 11% of the gross sales price. This figure is down from 15% based on discussions with growers who pay commission on their sales returns. Due to the lack of transparency in sales negotiations between wholesalers and customers, anecdotal evidence suggests that the deductions for commissions and marketing fees may be higher than this.

For our grower sample in 2009/10, the average cost of freight and storage is $3.24 per carton with industry levies of $0.24 per carton.

The average cost of ripening has been re-assessed down to $1.80 per carton. There are only a few marketers who deduct this charge and as a result should only be added to the cost of production in specific circumstances where this occurs.

Based on these statistics an indicative average cost of production models for bananas are shown in Table 11. Therefore the 'breakeven' gross price that an average grower needs to achieve to 'break even' is $23.88 if ripening services are included and $22.08 if they are not.

At this return level growers will make no profits, no return on capital and have no capability to reinvest in their business. In order therefore to develop a 'true' breakeven break even production cost further work, albeit relatively minimal, should occur.

The average cost of production of a 13kg equivalent carton of bananas increased by $0.55 from 2008/09 and 2009/10 or 2.4%.

Table 11: Average costs of production data for banana growers in 2008/09 and 2009/10.

Cost Centre	Details	$ per carton (without ripening fees included) - 2008/09	$ per carton (with ripening fees included) - 2008/09	$ per carton (without ripening fees included) - 2009/10	$ per carton (with ripening fees included) - 2009/10
On farm costs of production	From data analysis	$15.20	$15.20	$16.23	$16.23
Freight	From data analysis	$2.98	$2.98	$3.24	$3.24
Industry levies	From data analysis	$0.25	$0.25	$0.24	$0.24
Ripening fees	Indicated average charge for ripening.		$1.90		$1.80
Marketing fees and commissions	Gross price average $23.41. Commission rate assessed at 15% for 08/09 and 11% for 09/10.	$3.00	$3.00	$2.37	$2.37
Average Total Cost of Production ($/carton)		**$21.43**	**$23.33**	**$22.08**	**$23.88**

The reader should also note that this is average data and is inclusive of Lady Finger production costs which are higher than for Cavendish production. However, Lady Finger's represent only 2.5% of production in this study however and so won't have a significant impact on the averages.

Also, growers from NSW and WA were included in this analysis. These growers on average have lower transportation and marketing costs as not all fruit is sold through the central market system. Again, NSW growers only represent a comparatively small volume of total production.

Net Profit Per Planted Hectare – All Growers

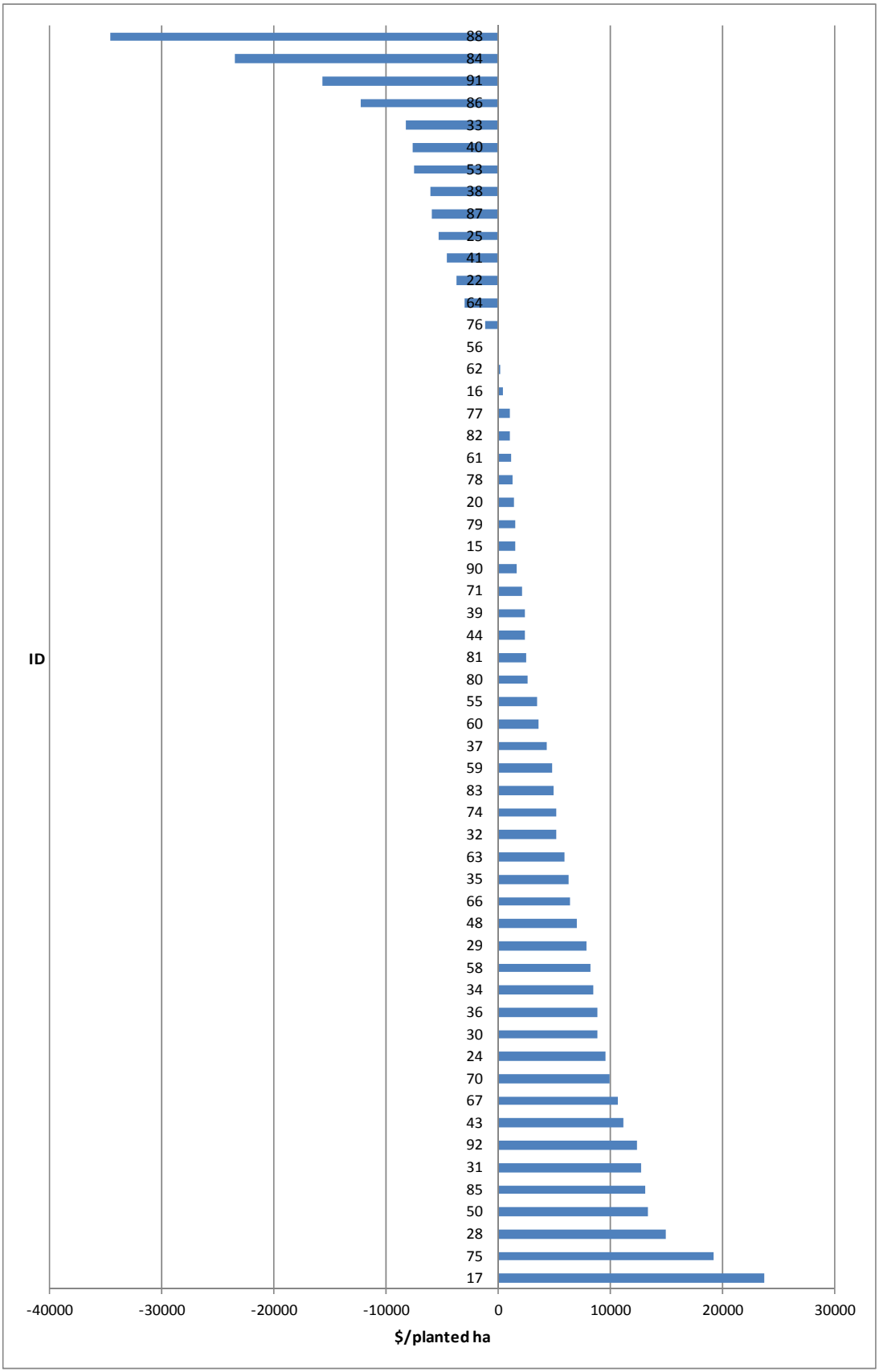
The KPI acknowledged by industry as the most reliable indicator of superior business performance is "net profit per planted hectare". Other indicators that have been used previously include average net price received, cartons per hectare or sales per hectare, but it is net profit per planted ha that evaluates each of these 3 combined indicators.

An alternative but less accurate measures of performance relating to banana production, are both "net banana sales per ha" and "on-farm costs per ha". The reader should be aware that some businesses may have high COGS costs per hectare because they are focused on producing a high quality product and so have higher per unit costs. Conversely, a grower may have very low per unit costs per hectare but they produce a poor quality product.

Figure 11 below shows the net profit per planted hectare performance for all 57 growers who contributed financial data to this study.

The average net profit figure is $3,507 per planted ha. The standard deviation of $9,554 per hectare confirms the significant variability in business performance. A standard deviation of $9,554 indicates that 68% of those growers have a profit per planted hectare that ranges + or - $9,554 from the mean (that is from -$6,047 to $13,061 per ha.

Figure 11: Net Profit per Planted Hectare for All Banana Growers in 2009/10



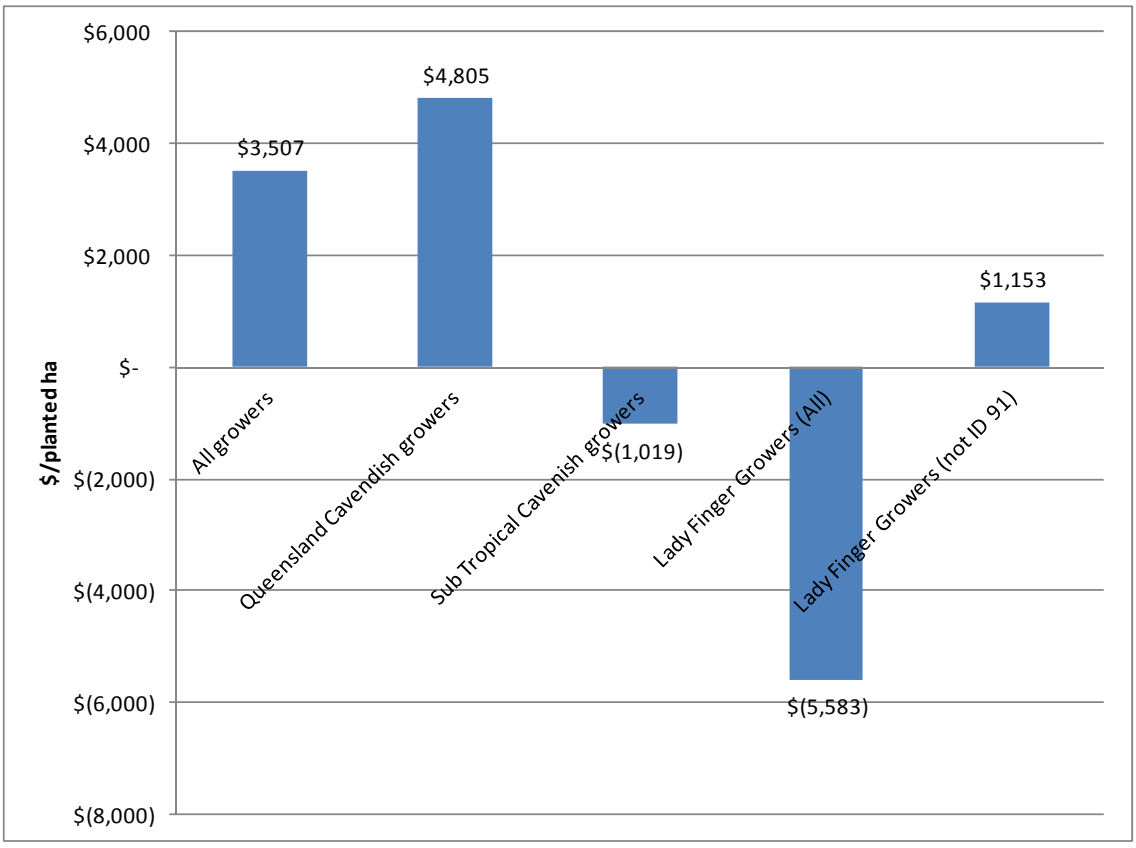
There are 4 growers (ID's 84, 86, 88 and 91) who have very significant negative net profit returns. Two of these businesses are 'start ups' and so would be expected to have poor financial performance figures whilst the crops reach maturity. A third grower is very small with a high family labour component and the fourth grower is a larger non-family enterprise which experienced significant managerial issues in this financial year. CDIPM decided against removing them from the financial analysis as it can be reasonably expected due to the fluidity of the industry that new growers will come and go, managerial issues will come up and small family owned businesses will be prepared to survive on low returns. If however these 4 growers were removed the net impact would for an increase from $3,507 to $4,703 on the average net profit per planted hectare.

Financial Performance – Different Grower Classes

Figure 12 demonstrates the relative profitability per hectare of the 3 grower classes compared to the average. In respect of Lady Finger growers, ID 91 was also removed from the analysis. Readers should be cautious in respect of the sub-tropical Cavendish grower figures where there are only 10 growers and also with Lady Finger where there is only 6 growers (or 5 if we remove ID 91).

Figure 12 shows that Queensland Cavendish growers performed best with a average net profit per planted ha of $4,805. By comparison sub-tropical Cavendish lost an average of $1,019 per hectare. Lady Finger growers when we remove Grower 91 show a relatively modest net profit of $1,153 per hectare.

Figure 12: Net profit per hectare comparisons amongst different grower groups 2009/10



Acknowledging that we are only examining a single year of data the key observations and comments from this analysis are

1. Queensland Cavendish are significantly more profitable than either Sub-Tropical Cavendish and Lady Finger growers.

2. The Sub-Tropical Cavendish financial performance is not unexpected as many of these businesses are very small family units who may or may not have other income streams in addition to bananas. With low average turnovers the impact of owners being paid a commercial wage for operating the business does have a significant impact on performance.

3. The comparable net profit figure in 2008/09 was $3,406 per hectare which is only 3.0% below the 2009/10 figure. The 'evenness' of these figures, in association with the costs data, the relevant stable position of average grower returns in 2009/10 compared with 2008/09.

Off-Farm Costs

There are 4 cost centres which can be regarded as being off-farm. These are:

1. Marketing fees and commissions
2. Transport outwards
3. Industry levies
4. Ripening Fees

Marketing fees and commissions. Growers generally receive a net price per carton from their wholesalers and marketers and so the deduction made by them for marketing fees and commissions is not known to the growers. 43 growers in this study received a price net of marketing fees and commissions with 16 growers receiving advice of the quantum of the fee charged. As a consequence of this lack of 'transparency' of fees charged, it is not possible to accurately assess the unit cost ($ or %) that marketing fees and commissions represent in the operation of a banana business.

Transport outwards. The importance that freights costs play in the overall cost structure of a banana business is dependent on which destinations the grower sells their produce to, distance to market, size of the grower and the ability of the grower to negotiate advantageous freight rates. Also, whether or not a grower uses rail or road transport has a large impact. Rail freight is considerably cheaper than road transport, however only a small percentage of growers use rail as the majority of the growers cited issues with convenience and greater levels of damage as to why they did not use it. And lastly, some customers of growers will pay freight, although this is considered to represent only a small percentage of costs.

Industry levies. The average payment made by growers for industry levies is 24 cents per carton.

Ripening Fees. Five growers included ripening fees as a separate line item in their financial statements. It is expected that some growers include ripening fees in their marketing fees and commissions. Ripening fees if charged average around $1.80 per carton.

Production Productivity

Figure 13 demonstrates the variability between growers in respect of the number of cartons that they harvested per hectare in 2009/10. The average cartons harvested per hectare was 2,126. The standard deviation shows a significant but not extreme standard deviation of 760 cartons per hectare. That is, 68% of the number of cartons packed per hectare by growers varies between 1,366 and 2,886.

Figure 13: Number of Cartons (13kg equivalent) per Planted Hectare – All Growers 2009/10

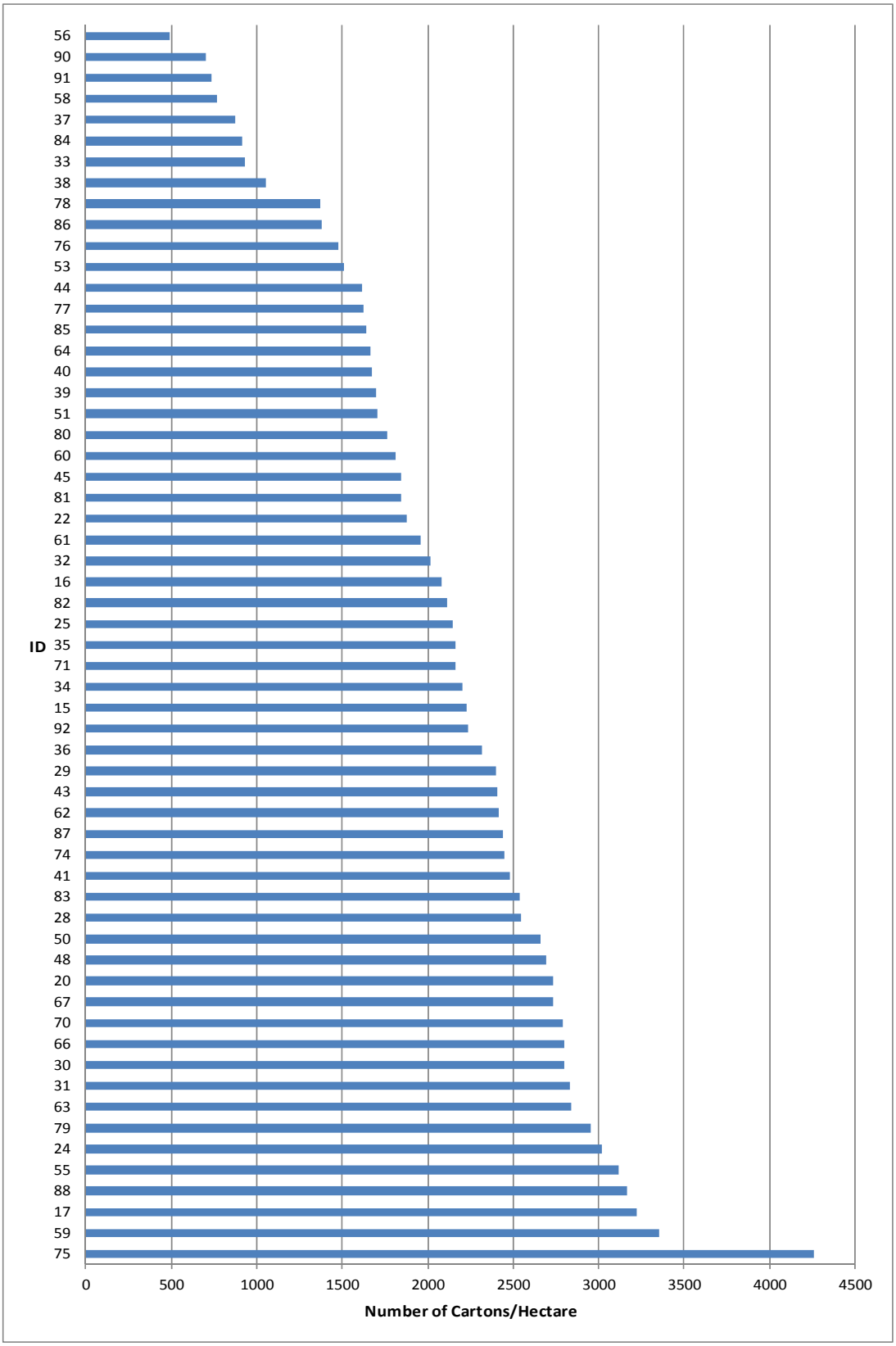


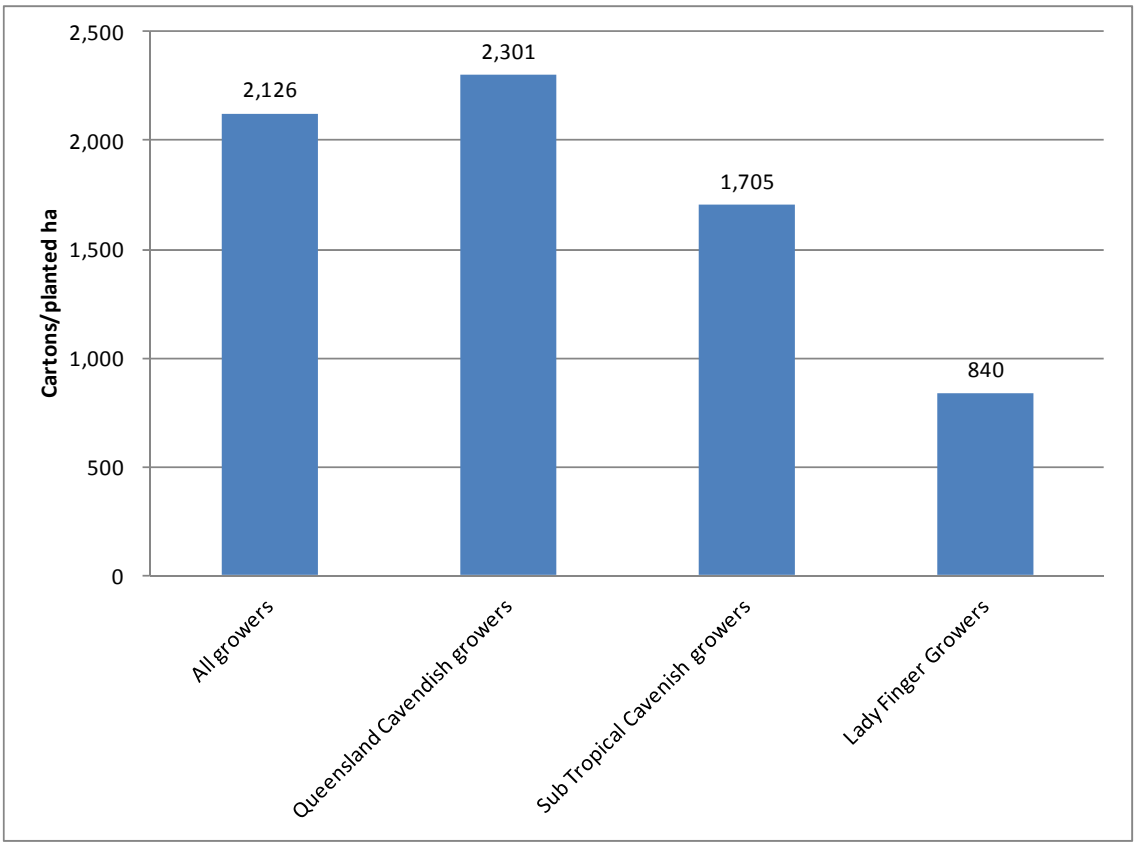
Figure 14 demonstrates the significant variation in cartons harvested per hectare between the 3 different grower classes. The average number of 13kg equivalent cartons harvested in 2009/10 was 2,301 by Queensland Cavendish growers. Yield figures dropped by nearly 600 cartons per hectare for sub tropical Cavendish growers. The factors contributing to the lower yields between these 2 grower classes include:

- Slower cycling times between crops in the sub tropical regions due to the lower temperatures and rainfall.
- Smaller bunch sizes again due to the lower temperatures and rainfall.
- Higher levels of reject as some growers do not bag fruit protecting the bunch against predators and diseases.
- Higher level of attention to detail by Queensland growers in respect of their crop management in comparison to New South Wales growers. This view does not extend to Western Australian growers.

Packing yields for Lady Fingers averaged 840 cartons per hectare which is 64% lower than for Queensland Cavendish growers. Lower yields for these growers is reflective of:

- Slower cycling times between crops and smaller bunch sizes due to the nature of the Lady Finger variety and the fact that the majority of the growers are on the Atherton Tablelands which has a milder climate
- Smaller fruit size produced by the variety.

Figure 14: No. of cartons packed per ha amongst different grower groups 2009/10 (13kg carton equivalents)



Financial Performance – All Growers with Two Data Years

Table 12 shows the comparative business performance of 39 banana growers who have all supplied data for the 2 years. By having data from both years allows a direct 'like for like' comparison on how growers performance during these 2 years.

Table 12: Comparison of Summary Financial & Non-Financial Performance Growers of Selected Growers in 2008/09 & 2009/10

KPI Name	Average Value - Dual Year Grower 2008/09	Average Value – Dual Year Grower 2009/10	Average Value – All Growers 2008/09	Average Value – All Growers 2009/10
Average banana sales per planted ha ($/ha)	$43,755	$47,924	$42,445	$44,771
Average net banana sales per carton ($/carton)	$19.81	$20.97	$19.78	$21.06
Average banana sales of total banana area ($/ha)	$40,939	$44,722	$39,675	$42,603
Average cost of goods sold ($)	$1,819,377	$2,033,007	$1,847,870	$2,053,306
Average COGS per planted ha ($/ha)	$38,192	$41,320	$37,756	$39,012
Average COGS per ha of total banana area ($/ha)	$35,734	$38,559	$35,292	$37,122
Average business gross profit ($)	$420,337	$498,443	$374,572	$463,165
Average gross profit per planted ha ($/ha)	$8,824	$10,131	$7,653	$8,800
Average gross profit per ha of total banana area ($/ha)	$8,256	$9,454	$7,154	$8,374
Average gross profit per carton ($/carton)	$3.99	$4.43	$3.57	$4.11
Average gross profit margin (%)	18.8%	19.7%	16.9%	18.4%
Average business expenses ($)	$193,732	$232,745	$207,867	$278,566
Average expenses per planted ha ($/ha)	$4,067	$4,730	$4,247	$5,293
Average expenses per ha of total banana area ($/ha)	$3,805	$4,414	$3,970	$5,036
Average business net profit ($)	$226,605	$265,698	$166,705	$184,599
Average net profit per planted ha ($/ha)	$4,757	$5,400	$3,406	$3,507
Average net profit ha of total banana area ($/ha)	$4,451	$5,039	$3,184	$3,337
Average net profit margin (%)	10.1%	10.5%	7.5%	7.3%
Net profit per carton ($/carton)	$2.15	$2.36	$1.59	$1.65
Total cost per carton ($/carton)	$19.13	$20.15	$19.58	$20.84
Average cost per carton excluding commission & ripening fees ($/carton)	$18.03	$18.94	$18.59	$19.73
Average no. of cartons per planted hectare (cartons/ha)	2,209	2,285	2,146	2,126

The key observations from this analysis are:

1. The 39 growers ("Dual year growers") who have contributed their data for 2 years have a higher average business performance in both years when compared with their respective averages. Net profit per hectare is 39.7% and 54.0% higher in 2008/09 and 2009/10 for the Dual Year Growers compared with the average.

2. Net profit per carton is 35.2% and 43.0% for the Dual year Growers in 2008/09 and 2009/10 respectively compared with the average grower.

3. Average net profit margins were significantly better at 10.1% and 10.5% in 2008/09 and 2009/10 for the dual grower group compared with 7.5% and 7.3% respectively for the average grower value.

4. Per planted hectare yields from the Dual Grower Group were 2.9% and 7.5% better than the grower average for 2008/09 and 2009/10 year. The Dual Grower group yields increased by 3.4% from 2008/09 to 2009/10.

5. For the dual year growers, average net profit per carton increased 9.8% year on year. Net profit per planted hectare improved 13.5%.

6. For the dual year growers, the production cost per carton increased 5.3% (as opposed to a per carton revenue increase of 9.8%).

7. There is no real explanation why this group is such a better performed group of growers.

8. Based on these Dual Year Growers and extrapolating these out as being representative of the overall industry average the 2009/10 year was on average a better year for banana growers compared with 2008/09. No analysis has been undertaken in respect of total production volumes in the 2 year period to see if there is any trend. Further, complicating any analysis on casual factors is the impact on the economy and general consumer sentiment towards the purchase of bananas. Directly linked to general consumer is weather and its influence on purchasing patterns.

9. What is a concern however is the apparent trend towards higher production costs, led as identified in the All Grower segment of this report in respect of wages (employees) and contract labour services and fertilizer and chemicals. Currently these 2 cost centres account for 54.3% of the total on-farm costs of bananas. Therefore any 5% movement in the cost of these items combined will increase production costs by 2.7%. Net profit growth was only 3.8% between 2008/09 and 2009/10 and so there is a real risk based on these 2 years of data that 'cost control' measures are going to need to be a paramount focus of growers in future. This is particular the case with the anecdotal evidence that since Cyclone Yasi that the total area planted to bananas may have increase by 7-10%. With a return to full 'steady' production expected within the 12 months, per carton revenue growth to countervail cost increases would appear unlikely at best.

Financial Performance – Queensland Cavendish Growers

Overall Financial Performance – Queensland Cavendish Growers

Table 13**Error! Reference source not found.** provides a summary of the gross financial performance of 43 Queensland Cavendish growers, with 2 growers having been excluded as they were unable to provide accurate financial statements for the assessment period. These 2 farms are owned by similar business interests and so their figures are aggregated.

Table 13: Comparison of Summary Financial Performance of Queensland Cavendish Growers compared to All Growers – 2009/10

KPI Name	Queensland Cavendish Growers 2009/10	All Growers 2009/10
Average banana sales per planted ha ($/ha)	$47,224	$44,771
Average net banana sales per carton ($/carton)	$20.52	$21.06
Average banana sales of total banana area ($/ha)	$44,686	$42,603
Average cost of goods sold ($)	$2,556,296	$2,053,306
Average COGS per planted ha ($/ha)	$40,579	$39,012
Average COGS per ha of total banana area ($/ha)	$38,398	$37,122
Average business gross profit ($)	$628,940	$463,165
Average gross profit per planted ha ($/ha)	$9,984	$8,800
Average gross profit per ha of total banana area ($/ha)	$9,447	$8,374
Average gross profit per carton ($/carton)	$4.34	$4.14
Average gross profit margin (%)	19.7%	18.4%
Average business expenses ($)	$326,218	$278,566
Average expenses per planted ha ($/ha)	$5,178	$5,293
Average expenses per ha of total banana area ($/ha)	$4,900	$5,036
Average business net profit ($)	$302,722	$184,599
Average net profit per planted ha ($/ha)	$4,805	$3,507
Average net profit ha of total banana area ($/ha)	$4,547	$3,337
Average net profit margin (%)	9.5%	7.3%
Net profit per carton ($/carton)	$2.09	$1.65
Total cost per carton ($/carton)	$19.88	$20.84
Average cost per carton excluding commission & ripening fees ($/carton)	$18.72	$19.73
Average no. of cartons per planted hectare (cartons/ha)	2,301	2,126

The key observations from this analysis are:

1. There were 43 growers included in the Queensland Cavendish grower group.

2. Average net profit per planted hectare of Queensland Cavendish (“QC”) growers was 37.0% than the average of All Growers.

3. Average net profit per carton was 26.6% higher for the QC grower group. This equated to $0.44 per carton.

4. Average production costs were 4.8% lower for the QC grower group (or $0.96 per carton).

5. Yields in cartons per hectare were 8.2% higher for QC grower group compared to the All Growers Average.

6. The average banana sales per planted ha was to $47,224 per ha. This figure is useful from a budgeting perspective for new and existing businesses.

7. Net profit as a percentage of sales is 10.2%. By comparison this figure is better than the 7.8% average of All Growers. These figures would be a considered marginal in other industry industries but generally acceptable for horticulture.

Costs of Production – Queensland Cavendish Growers

Table 14 shows the comparison between QC and All Growers of the on farm costs of banana production.

Table 14: On-Farm Costs of Production - % and Costs Per Carton for Queensland Cavendish Growers 2009/010

Cost Category	Queensland Cavendish Growers ($/carton) 2009/10	All Growers ($/carton) 2009/10	Difference ($/carton) 2009/10
Administration	$0.03	$0.03	$0.00
Consultant fees	$0.07	$0.07	$0.00
Contract packing	$0.85	$0.89	-$0.04
Contract spraying	$0.12	$0.12	$0.01
Electricity and gas	$0.16	$0.18	-$0.02
D&A*	$0.23	$0.30	-$0.07
Employment expenses	$0.03	$0.03	$0.00
Fertiliser and chemicals	$2.15	$2.24	-$0.09
Field consumables	$0.24	$0.23	$0.01
Finance	$0.25	$0.29	-$0.04
Freight inwards	$0.01	$0.01	$0.00
Fuel and oil	$0.31	$0.34	-$0.03
Hire of plant and equipment	$0.09	$0.10	-$0.01
Insurance	$0.07	$0.07	$0.00
Lease and rental (non-financial)	$0.11	$0.11	$0.00
Legal and accounting	$0.05	$0.05	$0.00
Licenses, permits and fees	$0.03	$0.03	$0.00
Marketing and promotion (not commissions or marketing fees)	$0.02	$0.02	$0.00
Miscellaneous	$0.06	$0.06	$0.00
Packaging	$1.93	$1.99	-$0.06
Planting materials	$0.10	$0.10	$0.00
Rates	$0.06	$0.07	-$0.01
R&M and replacements	$1.02	$1.12	-$0.10
Soil, leaf and water testing	$0.02	$0.02	$0.00
Telephone and internet	$0.04	$0.04	$0.00
Wages (employees) and contract labour services	$6.17	$6.57	-$0.40
Wages and on costs (owners)**	$0.88	$1.03	-$0.15
Water purchase	$0.05	$0.09	-$0.04
Total	**$15.17**	**$16.23**	**-$1.08**

The key observations from this analysis are:

1. The average on farm costs to produce a carton of Cavendish bananas was $1.06 lower than the All Growers average ($15.17 compared to $16.23).

2. The most significant areas for the cost variation were:

    a. Wages (employees) and contract labour services - $0.40 per carton cheaper.

    b. Wages & on costs (owners) - $0.15 per carton cheaper.

    c. Repairs & maintenance = $0.10 per carton cheaper.

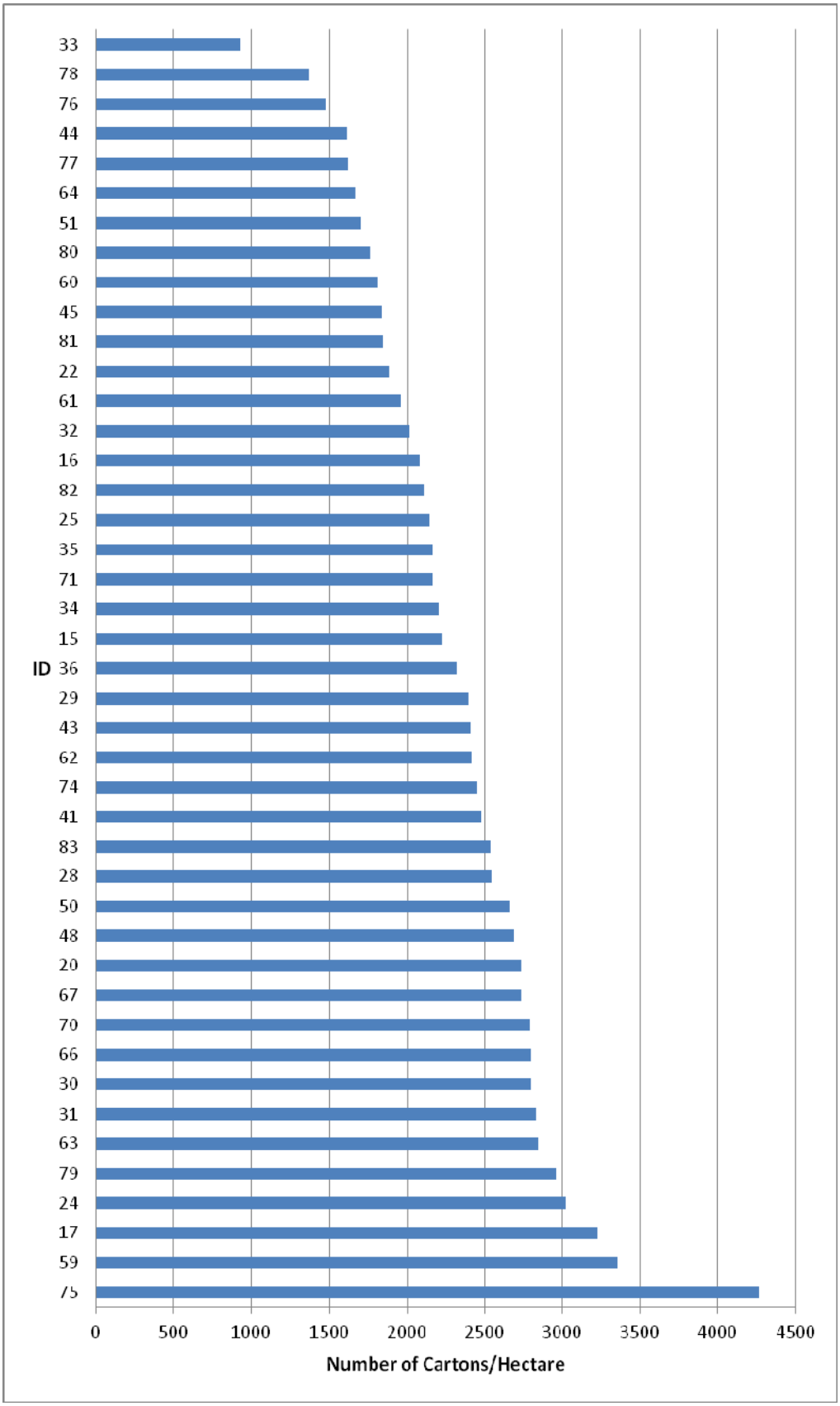
    d. Fertilizer & chemicals = $0.09 per carton cheaper.

3. The lower per unit costs are not unexpected. Queensland Cavendish growers as shown in Figure 14 were producing 8.2% more cartons per hectare. Further the majority of QC growers had more advanced management and production systems and a greater awareness / knowledge of farming costs. Further due to the lower production rates per hectare due to the smaller fruit size and lower cycling times of sub tropical Cavendish and Lady Fingers the costs per carton would be expected to be higher.

Productivity – Queensland Cavendish Growers

Figure 15 demonstrates the variation in number of cartons packed by Queensland Cavendish growers. The standard deviation in yields is equivalent to 507 cartons per hectare. Therefore 68% of growers have an average yield of between 1,694 and 2,908 cartons per hectare.

Figure 15: Number of Cartons Harvested per Hectare by Queensland Cavendish Growers 2009/10



Of the 5 bottom growers, in terms of per planted hectare production, 2 were growers who had a mixed Lady Finger / Cavendish business operation, 1 was an organic producer, 1 company was a 'start up' and the fifth a corporate.

There is however significant variation in yields of Queensland Cavendish as demonstrated in Table 15.

Table 15: Range and Average Values for Cartons Harvested per Hectare for Queensland Cavendish Growers in 2008/09 and 2009/10

KPI Name	Min. No. of Cartons per Ha 2009/10	Max. No. of Cartons per Ha 2009/10	Average Cartons per Ha 2008/09	Average Cartons per Ha 2009/10
No. of cartons per planted hectare (cartons/ha)	927	4,263	2,191	2,301

The factors identified as contributing to the variation in yields for Queensland Cavendish growers is discussed in subsequent sections.

Financial Performance – Sub-Tropical Growers

Overall Financial Performance – Sub-Tropical Cavendish Growers

Table 16 provides a summary of the gross financial performance of 10 sub Tropical Cavendish growers, located in NSW and WA. Two of these growers produce some Lady Fingers but they are not the major component of their banana production.

Table 16: Comparison of Summary Financial Performance of Sub-Tropical Cavendish Growers compared to All Growers – 2009/10

KPI Name	Sub-Tropical Cavendish Growers 2009/10	All Growers 2009/10
Average banana sales per planted ha ($/ha)	$41,029	$44,771
Average net banana sales per carton ($/carton)	$24.16	$21.06
Average banana sales of total banana area ($/ha)	$39,238	$42,603
Average cost of goods sold ($)	$339,650	$2,053,306
Average COGS per planted ha ($/ha)	$35,223	$39,012
Average COGS per ha of total banana area ($/ha)	$33,685	$37,122
Average business gross profit ($)	$72,292	$463,165
Average gross profit per planted ha ($/ha)	$7,499	$8,800
Average gross profit per ha of total banana area ($/ha)	$7,127	$8,374
Average gross profit per carton ($/carton)	$4.42	$4.14
Average gross profit margin (%)	17.6%	18.4%
Average business expenses ($)	$82,117	$278,566
Average expenses per planted ha ($/ha)	$8,518	$5,293
Average expenses per ha of total banana area ($/ha)	$8,146	$5,036
Average business net profit ($)	-$9,825	$184,599
Average net profit per planted ha ($/ha)	-$1,019	$3,507

KPI Name	Sub-Tropical Cavendish Growers 2009/10	All Growers 2009/10
Average net profit ha of total banana area ($/ha)	-$975	$3,337
Average net profit margin (%)	-2.4%	7.3%
Net profit per carton ($/carton)	-$0.60	$1.65
Total cost per carton ($/carton)	$25.76	$20.84
Average cost per carton excluding commission & ripening fees ($/carton)	$25.76	$19.73
Average no. of cartons per planted hectare (cartons/ha)	1,705	2,126

The key observations from this analysis are:

1. There were 10 growers included in the sub tropical Cavendish ("ST") group. Therefore caution needs to be expressed to readers of making extrapolations and to make general assumptions regarding the cost and revenue structures of the ST group.

2. The average price received by ST growers was $24.16 or 14.7% higher than for the average of All Growers. Three of the growers were from WA were the focus is on the value adding of their bananas by packing a large percentage of their production in portion controlled bags (either 750g or 1kg each) and branding them as being a superior tasting variety than tropically produced Cavendish. The other 7 growers from New South Wales would have had a lower average price due to their lower focus on branding and marketing of the 'taste' advantages of ST bananas.

3. Average net profit per carton was negative at $0.60 per carton compared with a +$1.65 for All Growers. Therefore the net variation was $2.25 per carton.

4. Average production costs were 23.6% higher for the ST grower group (or $4.92 per carton). The Sub-Tropical Cavendish financial performance is not unexpected as many of these businesses are very small family units who may or may not have other income streams in addition to bananas.

5. Yields in cartons per hectare were 19.8% for the ST Grower group compared to the All Growers Average. This is not an unexpected result due to the facts that:

    a. Slower cycling times between crops in the sub tropical regions due to lower average temperatures and rainfall.

    b. Smaller bunch sizes again due to the lower temperatures and rainfall.

    c. Higher levels of reject as some growers do not bag fruit protecting the bunch against predators and diseases.

    d. Higher level of attention to detail by Queensland growers in respect of their crop management in comparison to New South Wales growers. This view does not extend to Western Australian growers.

6. Average net profit per planted hectare of Queensland Cavendish ("QC") growers was $4,526 per hectare lower than for the average of All Growers, despite the higher average prices received. The lower net profit figure is due to the lower yields.

Costs of Production – Sub Tropical Cavendish Growers

Table 17 provides an on farm costs breakdown for the production of a carton of Sub-Tropical Cavendish bananas and a comparison with the average costs for all growers for 2009/10.

Table 17: On-Farm Costs of Production - % and Costs Per Carton for Sub-Tropical Cavendish Growers 2009/010

Cost Category	Sub-Tropical Cavendish Growers ($/carton) 2009/10	All Growers ($/carton) 2009/10	Difference ($/carton) 2009/10
Administration	$0.03	$0.03	$0.00
Consultant fees	$0.01	$0.07	-$0.06
Contract packing	$3.75	$0.89	$2.86
Contract spraying	$0.03	$0.12	-$0.09
Electricity and gas	$0.41	$0.18	$0.23
D&A*	$0.95	$0.30	$0.65
Employment expenses	$0.01	$0.03	-$0.02
Fertiliser and chemicals	$1.51	$2.24	-$0.73
Field consumables	$0.11	$0.23	-$0.12
Finance	$1.07	$0.29	$0.78
Freight inwards	$0.01	$0.01	$0.00
Fuel and oil	$0.42	$0.34	$0.08
Hire of plant and equipment	$0.04	$0.10	-$0.06
Insurance	$0.15	$0.07	$0.08
Lease and rental (non-financial)	$0.27	$0.11	$0.16
Legal and accounting	$0.15	$0.05	$0.10
Licenses, permits and fees	$0.07	$0.03	$0.04
Marketing and promotion (not commissions or marketing fees)	$0.09	$0.02	$0.07
Miscellaneous	$0.08	$0.06	$0.02
Packaging	$1.72	$1.99	-$0.27
Planting materials	$0.00	$0.10	-$0.10
Rates	$0.16	$0.07	$0.09
R&M and replacements	$1.56	$1.12	$0.44
Soil, leaf and water testing	$0.00	$0.02	-$0.02
Telephone and internet	$0.11	$0.04	$0.07
Wages (employees) and contract labour services	$5.52	$6.57	-$1.05
Wages and on costs (owners)**	$4.50	$1.03	$3.47
Water purchase	$1.00	$0.09	$0.91
Total	**$23.73**	**$16.23**	**$7.50**

The key observations from this analysis are:

1. The average on farm costs to produce a carton of Cavendish bananas is $7.50 higher than the All Growers average ($23.73 compared to $16.23).

2. The most significant areas for the cost variation were:

    a. Wages (employees) and contract labour services - $1.05 per carton cheaper. This is reflective of growers in both NSW and WA being smaller on average thus not employing as much labour. Further, 3 of the growers in the group had their fruit contract packed and so did not employ packing shed labour.

    b. Wages & on costs (owners) - $3.47 per carton higher. Again due to the small and family run nature of the majority of the ST group, wages paid to owners are a much higher proportion than their Queensland counterparts.

    c. Repairs & maintenance = $0.44 per carton higher. Due to the apparent low levels of profitability and hence reinvestment in plant and machinery in the ST grower group, repairs and maintenance costs are higher.

    d. Packaging = $0.27 per carton cheaper. This is due to the higher proportion of fruit that is contract packed.

    e. Fertiliser & chemicals = $0.73 per carton cheaper. This is believed to be in part due to the lower cycling times requiring lower nutrient levels. Further however it is apparent many NSW growers have adopted a lower input approach to banana production due in part to cyclical issues associated with lower profitability restricting the ability of growers to 'invest' in their business by applying higher levels of fertilizer.

    f. Finance costs = $0.70 per carton higher. The majority of NSW growers have relatively low levels of borrowings. However, WA growers generally have a high level of gearing in their operations. The reader should note there are only 3 growers included and so broadbrush conclusions should not be made.

    g. Depreciation & Amortisation = $0.65 per carton higher.

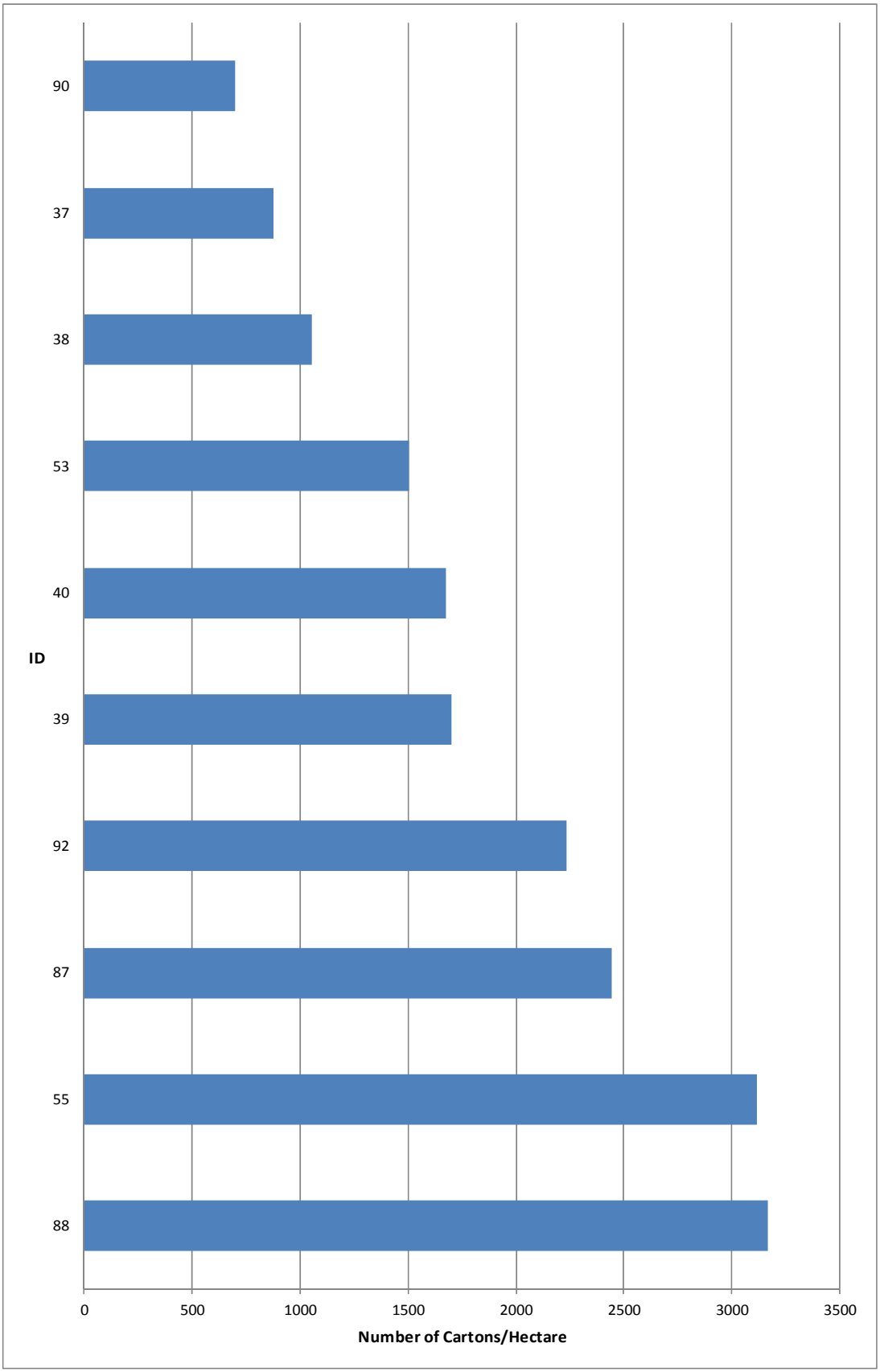
    h. Electricity & Gas = $0.23 per carton higher. Growers in WA have a high requirement for water (up to 25ML/ha) and so pumping costs are high for individual WA growers. In NSW the costs are comparatively high due to the lower level of scale and certain 'fixed' nature of some aspects of banana production in regards electricity. Also a higher than normal percentage of NSW growers have their own coolrooms which they run in order to store fruit to build up to marketable quantities. More importantly however a number of growers ripened their own fruit for local sales and so a coolroom is essential for this process.

3. The higher per unit costs are not unexpected. ST growers as shown in Figure 14 were producing 19.8% less cartons per hectare. The majority of ST growers have less advanced management and production systems and a lower awareness / knowledge of farming costs. Further due to the lower production rates per hectare due to the smaller fruit size and lower cycling times of sub tropical Cavendish costs per carton would be expected to be higher.

Productivity – Sub Tropical Cavendish Growers

Figure 16 demonstrates the variation in number of cartons packed by ST Cavendish growers. The average yield is 1,705 cartons per planted hectare. The standard deviation in yields is not meaningful due to the fact that there are only 10 ST contributors to the project.

Figure 16: Number of Cartons Harvested per Hectare by Sub Tropical Cavendish Growers 2009/10



There is however significant variation in yields of sub Tropical Cavendish as demonstrated in Table 18.

Table 18: Range and Average Values for Cartons Harvested per Hectare for Sub Tropical Cavendish Growers in 2008/09 and 2009/10

KPI Name	Min. No. of Cartons per Ha 2009/10	Max. No. of Cartons per Ha 2009/10	Average Cartons per Ha 2008/09	Average Cartons per Ha 2009/10
No. of cartons per planted hectare (cartons/ha)	700	3,164	2,191	840

The factors identified as contributing to the variation in yields for sub tropical Cavendish growers is discussed in subsequent sections.

Financial Performance – Lady Finger Growers

Overall Financial Performance – Lady Finger Growers

Table 19 provides a summary of the gross financial performance of 6 Lady Finger growers all of which were located in Queensland, predominately in the Atherton Tableland region.

Lady Finger growers, as will be demonstrated, are a slow grower variety with smaller average bunch weights when compared with Cavendish bananas. Therefore averages per unit costs of production are higher. Net returns per carton (or kilogram) are consequently higher when compared with Cavendish.

The sample size of Lady Finger growers only involves 6 growers and so extreme caution should be taken by readers in the making of any general assumptions on this basis of the figures presented. Further, 1 grower due to management issues has a very high costs structure which distorts significantly many of the KPI's generated. In some instances their figures have been excluded from the analysis.

The reader should also be aware that 3 of the 6 growers have a proportion of their total production in Cavendish, although Lady Fingers are their main production line. This will in part result in lower production costs due to the lower Cavendish costs.

Table 19 provides a summary of the average financial performance of these 6 Lady Finger growers.

Table 19: Comparison of Summary Financial Performance of Lady Finger Growers compared to All Growers – 2009/10

KPI Name	Lady Finger Growers 2009/10	Lady Finger Growers not including Grower 91 – 2009/10	All Growers 2009/10
Average banana sales per planted ha ($/ha)	$26,150	$28,347	$44,771
Average net banana sales per carton ($/carton)	$31.11	$31.03	$21.06
Average banana sales of total banana area ($/ha)	$26,018	$28,111	$42,603
Average cost of goods sold ($)	$1,472,454	$959,742	$2,053,306
Average COGS per planted ha ($/ha)	$27,535	$24,879	$39,012
Average COGS per ha of total banana area ($/ha)	$27,396	$24,672	$37,122
Average business gross profit ($)	-$18,173	$199,485	$463,165

KPI Name	Lady Finger Growers 2009/10	Lady Finger Growers not including Grower 91 – 2009/10	All Growers 2009/10
Average gross profit per planted ha ($/ha)	-$340	$5,171	$8,800
Average gross profit per ha of total banana area ($/ha)	-$338	$5,128	$8,374
Average gross profit per carton ($/carton)	-$0.40	$5.66	$4.14
Average gross profit margin (%)	-1.2%	17.2%	18.4%
Average business expenses ($)	$280,364	$155,023	$278,566
Average expenses per planted ha ($/ha)	$5,243	$4,019	$5,293
Average expenses per ha of total banana area ($/ha)	$5,216	$3,985	$5,036
Average business net profit ($)	-$298,537	$44,462	$184,599
Average net profit per planted ha ($/ha)	-$5,583	$1,153	$3,507
Average net profit ha of total banana area ($/ha)	-$5,555	$1,143	$3,337
Average net profit margin (%)	-20.5%	3.8%	7.3%
Net profit per carton ($/carton)	-$6.64	$1.26	$1.65
Total cost per carton ($/carton)	$38.99	$31.64	$20.84
Average cost per carton excluding commission & ripening fees ($/carton)	$38.34	$30.64	$19.73
Average no. of cartons per planted hectare (cartons/ha)	840	913	2,126

The key observations from this analysis are:

1. The average price received by LF growers was $10.15 per carton higher in comparison to the average of All Growers. Lady Fingers have traditionally had a higher cost base at retail level as the fruit is seen as a niche product as opposed to a 'mainstream' variety such as Cavendish. LF growers will never be able to accept prices at the level of Cavendish growers due to the higher cost base due to the slower cycling and bunch weights of Lady Fingers. .

2. Average net profit per carton was negative at $6.64 per carton compared with a +$1.65 for All Growers. However if we exclude ID 91 the average net profit per carton level increases to $1.26 per carton which is only $0.40 lower than for All Growers.

3. Average business sales per hectare despite the $10.15 per carton higher prices are significantly lower at $26,150 per hectare compared with $44,771 for All Growers. This is reflective of the fact that average yields of Lady Fingers are only 39.5% that of Cavendish.

4. Average costs of production (ignoring ID 91) are $10.91 per carton higher than for Cavendish. Again this is reflective of the slower cycling and bunch weights of Lady Fingers.

5. Yields in cartons per hectare were 39.5% for Lady Finger growers compared to All Growers. This is not an unexpected result due to the facts that:

a. Slower cycling times between crops due in part to nature of the variety but also due to the fact that the majority of Lady Fingers are grown on the Atherton Tableland which has a lower number of 'growing degree days' compared with the Wet Tropics of Innisfail and Tully.

b. Higher levels of reject as Lady Fingers are typically more heavily graded than Cavendish and more prone to some bunch marking diseases.

Costs of Production – Lady Finger Growers

Table 20 provides an on farm costs breakdown for the production of a carton of Lady finger bananas and a comparison with the average costs for all growers for 2009/10. Due to a unusually high cost of production for Grower ID 91, a separate on farm costs breakdown column has been included which does not include that growers figures.

Table 20: On-Farm Costs of Production - % and Costs Per Carton for Lady Finger Growers 2009/010

Cost Category	All Lady Finger Growers ($/carton) 2009/10	Lady Finger Growers not including Grower 91 2009/10	All Growers ($/carton) 2009/10	Difference ($/carton) with Lady Fingers Growers not including Grower 91 2009/10
Administration	$0.07	$0.11	$0.03	$0.08
Consultant fees	$0.02	$0.02	$0.07	-$0.05
Contract packing	$0.00	$0.00	$0.89	-$0.89
Contract spraying	$0.00	$0.01	$0.12	-$0.11
Electricity and gas	$0.57	$0.35	$0.18	$0.17
D&A*	$1.39	$0.81	$0.30	$0.51
Employment expenses	$0.05	$0.03	$0.03	$0.00
Fertiliser and chemicals	$4.71	$4.11	$2.24	-$1.87
Field consumables	$0.19	$0.22	$0.23	-$0.01
Finance	$0.75	$0.82	$0.29	$0.53
Freight inwards	$0.04	$0.02	$0.01	$0.01
Fuel and oil	$1.01	$0.80	$0.34	$0.46
Hire of plant and equipment	$0.38	$0.27	$0.10	$0.17
Insurance	$0.13	$0.20	$0.07	$0.13
Lease and rental (non-financial)	$0.00	$0.00	$0.11	-$0.11
Legal and accounting	$0.11	$0.16	$0.05	$0.11
Licenses, permits and fees	$0.05	$0.08	$0.03	$0.05
Marketing and promotion (not commissions or marketing fees)	$0.05	$0.05	$0.02	$0.03
Miscellaneous	$0.12	$0.13	$0.06	$0.07
Packaging	$3.48	$2.92	$1.99	$0.93
Planting materials	$0.00	$0.00	$0.10	-$0.10
Rates	$0.06	$0.09	$0.07	$0.02
R&M and replacements	$3.02	$1.54	$1.12	-$0.42
Soil, leaf and water testing	$0.00	$0.00	$0.02	-$0.02
Telephone and internet	$0.07	$0.11	$0.04	$0.07
Wages (employees) and contract labour services	$15.89	$10.97	$6.57	$4.40
Wages and on costs (owners)**	$2.21	$3.38	$1.03	$2.35
Water purchase	$0.49	$0.43	$0.09	$0.34
Total	**$34.95**	**$27.62**	**$16.23**	**$11.39**

The sample size of Lady Finger growers only involves 6 growers and so again extreme caution is advised to readers regarding making general assumptions on the basis of the figures presented.

The key observations from this analysis are:

1. The average on farm costs to produce a carton of Lady Finger bananas is $11.39 per 13kg carton equivalent ($27.62 compared to $16.23).

2. The most significant areas for the cost variation were:

    a. Wages (employees) and contract labour services - $4.40 per carton cheaper. This is reflective of the slower growing times and lower yields per hectare of LF despite the fact that similar field tasks are required for both varieties. Further labour costs associated with packing are significantly higher for Lady Fingers as typically the fruit is stickered and the amount of additional packing material used in each box add to time taken to pack a box. Our estimates are that average packing rates are around 50% that of Cavendish growers.

    b. Wages & on costs (owners) - $2.35 per carton higher. Again due to the small and family run nature of the majority of the LF group, wages paid to owners are a much higher proportion than their Queensland Cavendish growing counterparts.

    c. Packaging materials - $0.99 per carton higher. This is reflective of the smaller average box size that is typically used (8kg) for premium fruit which are sold at a similar price to a 13kg Cavendish carton. Since these statistics are presented in 13kg carton equivalent sizes this results in the higher price. Further, packaging material costs as alluded to in the point above are greater due to the use of stickers by many growers and the fact that there is more material in a box to protect the fruit from marking and bruising.

    d. Repairs & maintenance = $0.42 per carton higher. There is no apparent reason for why these R&M costs would be higher for the LF group compared to the All Groups average.

    e. Fertiliser & chemicals = $1.87 per carton higher. Lady Fingers are an aggressive growing tree and so require high levels of nutrition in comparison to the yields that are received per hectare.

    f. Fuel & oil = $0.46 per carton higher. Reasons why this cost is likely to be higher is due to the fact that whilst similar in field activities may be required for Lady Fingers compared to Cavendish, the yields per hectare are so much lower that the per unit (carton) costs are higher.

    g. Finance costs = $0.53 per carton higher. CDIPM's observations are that the majority of these businesses are relatively young (<10 years old) and so it would be expected that there would be a higher average level of borrowings to support this new development when compared with the more mature Cavendish industry.

    h. Depreciation & Amortisation = $0.51 per carton higher. This again may be reflective of the fact that the plantations are relatively young and so the capital write offs are higher.

    i. Contract Packing = $0.00. There are no growers amongst the Lady Finger group who have their fruit packed at a contract packing facility.

3. The higher per unit costs are not unexpected. ST growers as shown in Figure 14 were producing 19.8% less cartons per hectare. The majority of ST growers have less advanced management and production systems and a lower awareness / knowledge of farming costs. Further due to the lower production rates per hectare due to the smaller fruit size and lower cycling times of sub tropical Cavendish costs per carton would be expected to be higher.

Figure 16 demonstrates the variation in number of cartons packed by Queensland Cavendish growers. The average yield is 1,705 cartons per planted hectare. The standard deviation in yields is not meaningful due to the fact that there are only 10 ST contributors to the project.

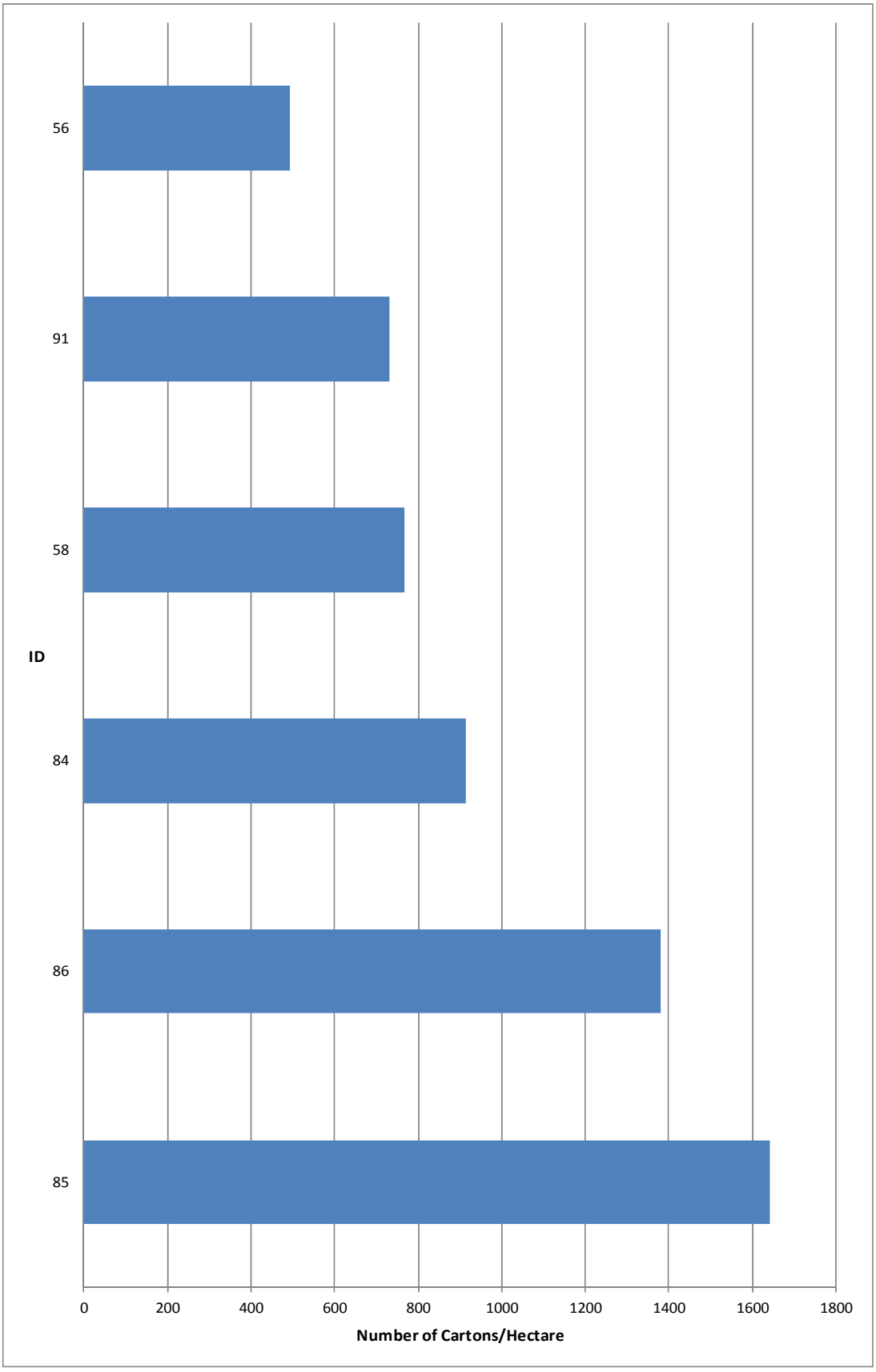
Productivity – Lady Finger Growers

Table 21 demonstrates the variation in number of cartons packed by Lady Finger growers. The average yield is 804 cartons per planted hectare (931 cartons if ID 91 is removed). The standard deviation in yields is not meaningful due to the fact that there are only 6 Lady Finger grower contributors to the project.

Table 21: Range and Average Values for Cartons Harvested per Hectare for Lady Finger Growers in 2008/09 and 2009/10

KPI Name	Min. No. of Cartons per Ha 2009/10	Max. No. of Cartons per Ha 2009/10	Average Cartons per Ha 2008/09	Average Cartons per Ha 2009/10
No. of cartons per planted hectare (cartons/ha)	493	1,641	2,191	840

Figure 17: Number of Cartons Harvested per Hectare by Lady Finger Growers in 2009/10



Human Resource Management Skills

In 2009/10, the human resource management skills of each grower were assessed, across a broad range of parameters. Each grower received an human resource management skills rating of between 1 and 10 (with zero if the grower did not employ labour). The reader should be aware that the marketing skills rating assessment was not based on an objective assessment method, but rather the subjective assessment of CDIPM based on the feedback received during the interview process to a series of questions.

Marketing Skills

In 2009/10, the marketing skills of each grower were assessed, across a broad range of parameters. Each grower received an marketing skills rating of between 1 and 10 (with 1 being very low and 10 being excellent or highly skilled). The reader should be aware that the marketing skills rating assessment was not based on an objective assessment method, but rather the subjective assessment of CDIPM based on the feedback received during the interview process to a series of questions.

In 2009/10 the variation in price received per carton by the Top 10 growers compared to the grower average was $0.53 per carton ($21.43 compared to $20.90).

Whilst some growers may not consider $0.53 to be significant amount, it does represent 2.5% of the sales value that a grower receives and may in fact be the different between a profit or loss in some years.

Analysis of Top Ten Growers

Net Profit Per Planted Hectare – Business Success Indicator

Whether or not a grower was included in the Top 10 growers was based on their net profit per planted hectare. This measure is considered the most accurate indicator of business success (in economic terms) as this figure combines the 3 principal components of productivity, sales and production costs. Other traditional measures such as gross profit, cartons per hectare are net return per carton are not considered appropriate business viability measures because they do not all 3 business measure components.

Net profit per planted hectare, rather than just net profit is a preferred measure as typically the latter KPI would typically be biased towards the larger producers.

When considering the net profit figures per hectare, the reader should be aware again that this analysis also includes a wages provision to the owners of the business. This figure varies but for the principal owner it varies from $50k to $135k per annum depending on the size of the business. By including this provision, each business is compared on a 'like-for-like' basis and the net profit figure (before tax) gives a good indication of the return on capital or profit before tax.

Top Ten Growers – Net Profit Per Planted Hectare

The Top 10 growers based on net profit per hectare are shown in Table 22 . The 'cut off' value to be included in the Top 10 growers in 09/10 was $9,909 per planted ha.

Table 22: Net Profit per Planted Hectare of Top Ten Growers in 2009/10 x Grower Identification Number

Position	Grower ID Number 2009/10	Net Profit per Ha ($/ha) – 2009/10
1	17	$23,740
2	75	$19,182
3	28	$14,907
4	50	$13,318
5	85	$13,159
6	31	$12,725
7	92	$12,344
8	43	$11,187
9	67	$10,672
10	70	$9,909
Average		$14,813

Top Ten Growers – Size and Location

Table 23 shows the distribution of the Top 10 Growers in terms of business size, based on cartons packed per planted hectare, for both 2008/09 and 2009/10.

Table 23: Distribution of Top Ten Growers by Business Size in Cartons Packed per Planted Hectare, 2008/09 and 2009/10.

Grower Type	<50k cartons	50k-<75k cartons	75k-<150k cartons	>150k cartons
Top 10 (2008/09)	1	4	2	3
Total Growers (2008/09)	20	8	10	8
Top 10 (2009/10)	2	3	3	2
Total Growers (2009/10)	24	12	11	12

The key observations from this analysis are:

1. Initial observations would conclude that business size does not appear to impact on the potential to be included in the Top 10 growers.

2. However an examination of the 2 growers in the Top 10 shows that both of them had production volumes of less than 175k cartons. There were no businesses therefore in the Top 10 who had significant scale, that is, above 200k cartons.

3. There were only 2 growers in the Top 10 with less than 50k cartons despite there being 24 growers in the sample. This is not unexpected because for this growers who typically will have a turnover of just over $1 million or less per annum, the percentage of total costs that wages paid to owners because significant. For example, a sole operator owner with a turnover of $1 million per annum will have a minimum percentage of wages paid to owners of 6.9%.

4. Therefore from this analysis the general conclusion is that the most profitable growers on a net profit per carton basis are produce in excess of 50k and 175k cartons per annum. This view is further supported when you analysis the size distribution of the Top 10 growers from 2008/09.

Other observations on Top 10 growers based on an inspection of the business characteristics include:

1. All growers are family owned businesses. There are no 'corporate' growers included in the Top 10.

2. 1 grower has their fruit packed at a central packing facility, with the other 9 growers packing their fruit on their own premises.

Table 24 shows the location and principal variety produced of the Top 10 growers in 2009/10. The figures in brackets show the number of growers located in that region.

Table 24: Location and Principal Variety Produced by the Top Growers – 2009/10

Location	Queensland Cavendish (Top 10 Growers)	Sub Tropical Cavendish (Top 10 Growers)	Lady Finger (Top 10 Growers)
Atherton Tablelands	-	-	1
Innisfail	6 (26)	-	-
Tully / Mission Beach	2 (14)	-	-
Kennedy Valley	-	-	-
Far Northern NSW	-	-	-
Northern NSW	-	-	-
Carnarvon	-	1	-

Location	Queensland Cavendish (Top 10 Growers)	Sub Tropical Cavendish (Top 10 Growers)	Lady Finger (Top 10 Growers)
Total	8	1	1
Total No. of Growers	43	10	6

Eight out of the Top 10 growers produce Cavendish and are located in Queensland. This is not surprising given that 43 of the 59 contributors are located in this production group. The distribution also shows that both a Lady Finger or Sub Tropical Cavendish grower can be included in the Top 10. Some commentators have indicated that neither variety can be as profitable as North Queensland produced Cavendish. A more detailed examination of characteristics of the Top 10 growers is provided in subsequent sections.

Comparisons of Top Ten Growers Between 2008/09 and 2009/10 – Net Profit per Planted Hectare

Table 25 compares the net profit performance of the Top 10 growers in 2008/09 and 2009/10.

Table 25: Comparison of Top Ten Growers in 2008/09 and 2009/10 based on Net Profit per Planted Hectare

Position	Grower ID Number 2008/09	Net Profit per Ha ($/ha) – 2008/09	Grower ID Number 2009/10	Net Profit per Ha ($/ha) – 2009/10
1	20	$25,163	17	$23,740
2	70	$22,888	75	$19,182
3	36	$17,400	28	$14,907
4	67	$16,798	50	$13,318
5	29	$15,907	85	$13,159
6	40	$10,973	31	$12,725
7	31	$10,629	92	$12,344
8	26	$9,882	43	$11,187
9	65	$9,367	67	$10,672
10	28	$8,887	70	$9,909
Average		$15,398		$14,813

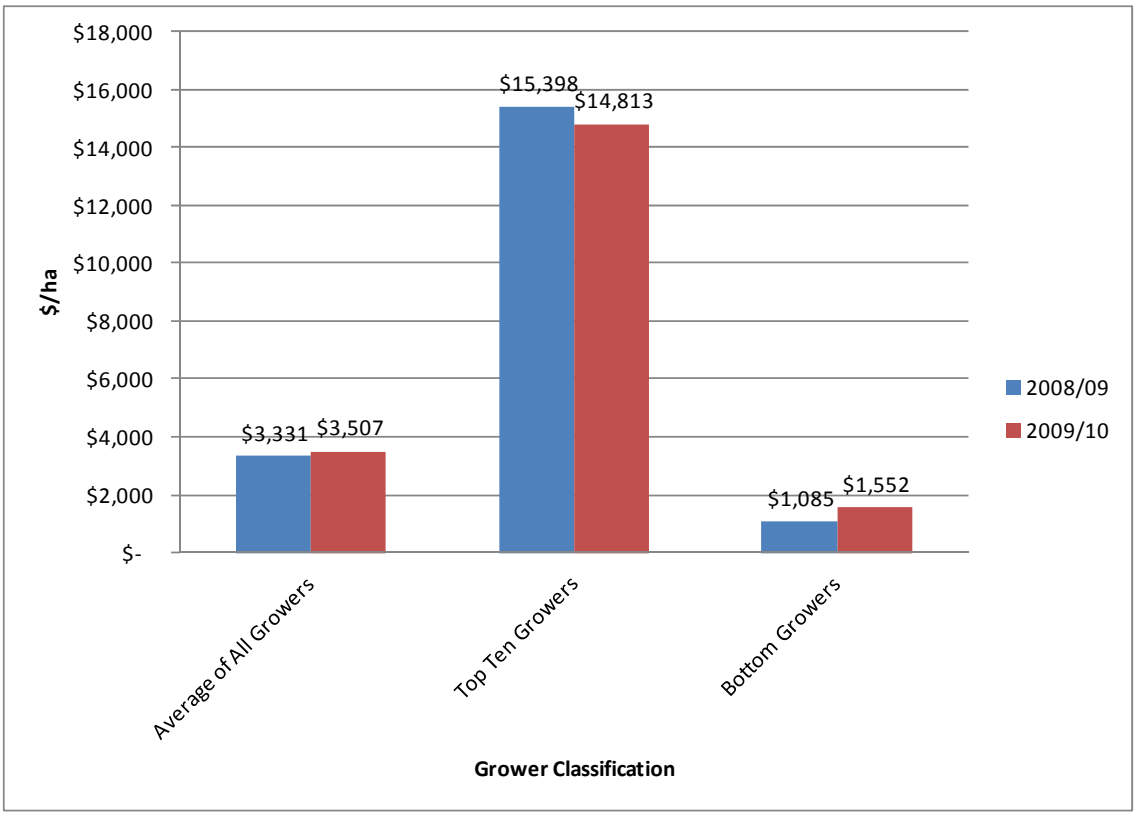
The key observations from this analysis are:

1. Four out of the 10 growers have been in the Top 10 for **both** years.
2. Two growers from 2008/09 were not project participants in 2009/10 and so could not be included in the Top 10 for both years.
3. Three growers in 2009/10 have only been participants for 1 year and so could not be included in Top 10 for both years.
4. Eight growers in the 2009/10 Top 10 are Queensland Cavendish growers, 1 is a Sub-Tropical Cavendish grower and 1 is a Lady Finger grower.
5. The 'cut off' value to be included in the Top 10 growers in 09/10 was $9,909 per planted ha.
6. The average net profit per planted hectare is $14,813 which is only a $585 difference from the previous year. Other analysis in subsequent sections shows the similarities in financial performance across all growers between the 2 years.

Comparison of Net Profit Per Planted Hectare of Different Groups of Growers in 2008/09 and 2009/10

Figure 18 compares the average net profit per planted hectare performance of 3 'classes' of growers, the Top 10, All growers and the 'Bottom' 47 growers. The figure demonstrates how close the values for each of the 3 grower 'classes' were across both years. Anecdotal discussions during the course of the study confirmed the fact that there was little difference in the 2 years.

Figure 18: Comparison of net profit per planted hectare in 2008/09 and 2009/10



The key observation from this figure is the significant difference in financial performance between the Top 10 and 'Bottom' 47 growers.

Comparisons of Top Ten Growers Between 2008/09 and 2009/10 – Gross Financial Statistics

Table 26 demonstrates the difference in performance on selected KPI's of the Top 10 growers compared against the rest.

Table 26: Gross Financial Performance Comparison Between Top 10, All Growers & Bottom 47 Banana Growers – 2009/10

KPI Name	Top 10 Growers	All Growers	Bottom 47	% Variation Top 10 compared to All Growers	% Variation Average compared to Bottom 47
No. of growers in sample	10	57	47		
Banana sales per planted ha ($/ha)	$60,292	$44,771	$39,087	34.7%	14.5%
Average net banana sales per carton ($/carton)	$21.43	$21.06	$20.99	1.8%	0.3%

KPI Name	Top 10 Growers	All Growers	Bottom 47	% Variation Top 10 compared to All Growers	% Variation Average compared to Bottom 47
COGS per planted ha ($/ha)	$44,286	$39,012	$35,325	13.5%	10.4%
Gross profit per planted ha ($/ha)	$20,613	$8,800	$6,349	134.2%	38.6%
Average gross profit margin (%)	31.8%	18.4%	15.2%		
Expenses per planted ha ($/ha)	$5,800	$5,293	$4,796	9.6%	10.4%
Net profit per planted ha ($/ha)	$14,813	$3,337	$1,552	343.9%	115.0%
Average net profit margin (%)	22.8%	7.3%	3.7%		
Average net return per carton ($/carton)	$21.43	$20.90	$19.47	2.5%	7.3%
Average non-banana income per carton ($/'carton')	$1.63	$1.42	$1.28	14.8%	10.9%
Average total cost per carton ($/carton)	$17.80	$20.68	$19.98	-13.9%	3.5%
Average on farm cost per carton ($/carton)	$13.55	$16.23	$16.76	-16.5%	-3.2%
Average off farm cost per carton ($/carton)	$4.25	$4.62	$4.69	-8.0%	-1.5%
Average net profit per carton ($/carton)	$5.26	$1.64	$0.77	220.7%	113.0%
Number of cartons packed per planted ha (cartons/ha)	2,810	2,142	2,008	31.2%	6.7%

The key observations on the performance of the Top 10 growers in the comparison to the other growers are:

1. The value of net banana sales per hectare is 34.7% higher than the average. That is growers are producing more cartons per hectare and / or at a higher net sales price.

2. Costs per hectare are slightly higher compared with the average, both in terms of COGS (13.4%) and expenses (9.6%). This observation is not unexpected as by producing more cartons per hectare, for instance, costs of packaging would be expected to be higher.

3. Net profit of $14,813 per hectare is nearly $11,306 per hectare ahead of the average grower. The extent of this variation was previously shown in Figure 18.

4. Yields of packed cartons per planted hectare are 31.2% higher amongst the Top 10 grower group compared to the average. Therefore this is 1 of the major factors that contribute to the growers being in that position. Interestingly, the level of correlation between yield in cartons per hectare and net profit per planted hectare is 0.41, which indicates only a moderate relationship level between the 2 factors.

5. On farm costs per carton are $2.68 per carton cheaper amongst the Top 10 growers when compared with the rest. The key contributors to this lower cost level are discussed in a subsequent section.

6. Even though there is a lower off farm cost per carton for the Top 10 growers this should not be considered significant. The principal costs are transport and marketing fees and commissions. These costs are determined by the distance to the location serviced in the case of transport and the nature of the marketing relationship held between the grower and his customer.

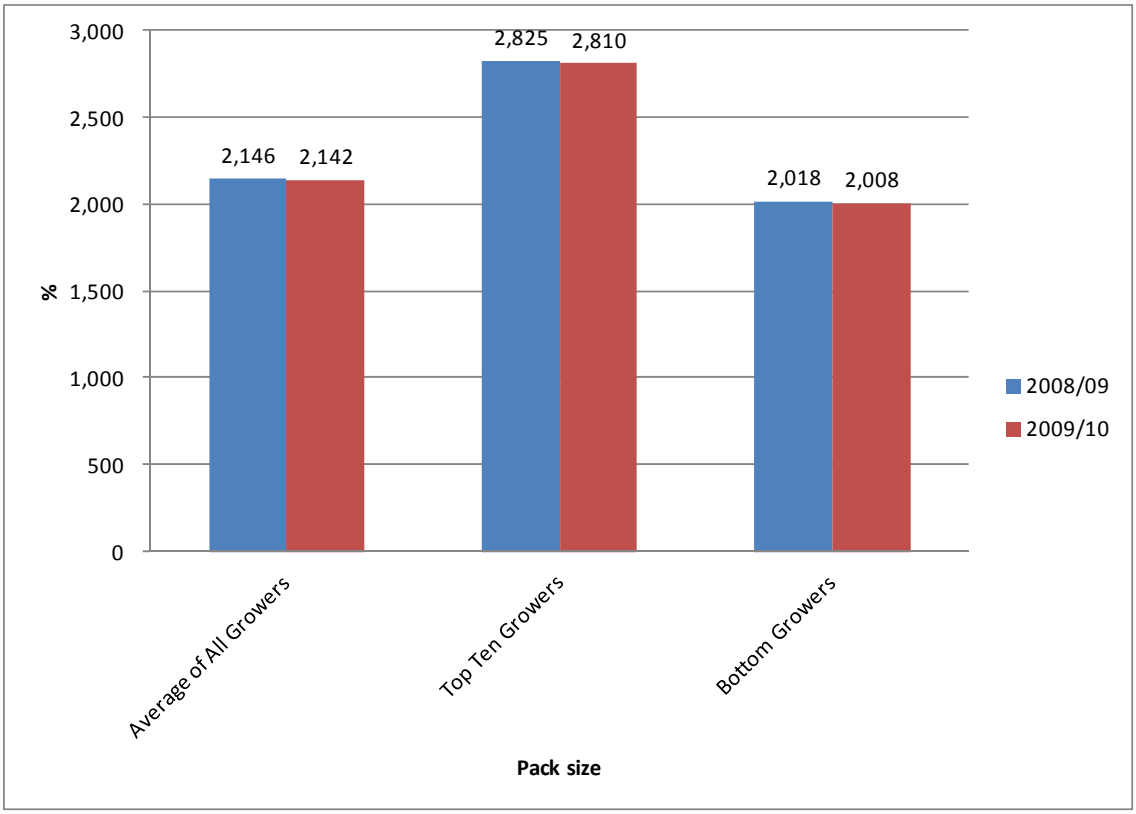
7. An average net profit margin of 22.8% in horticulture is considered to be very good, as is the case here, particularly when we also include that a provision for owners wages have been included for all growers.

Comparisons of Top Ten Growers Between 2008/09 and 2009/10 – Cartons per Hectare

The Top 10 growers in 08/09 produced 34.9% more packed cartons per hectare than the average grower.

Figure 19 shows the extremely close similarity in yields between the 3 classes of growers for 2008/09 and 2009/10.

Figure 19: Numbers of cartons packed (13kg equivalent) in 2008/09 and 2009/10 for Top 10 Growers



Comparisons of Top Ten Growers Between 2008/09 and 2009/10 – Costs Per Carton

Table 27 compares the major on farm costs between the Top 10 growers and that of All Growers included in the study.

Table 27: Comparison of 10 Largest On-Farm Costs between Top 10 Growers with the Average of All Growers

Location	Top 10 Growers ($/carton)	Average All Growers ($/carton)
Wages (employees) & contract labour	$4.90	$6.57
Wages and on costs (owners)**	$1.13	$1.03
Fertiliser and chemicals	$1.93	$2.24
Packaging	$2.35	$1.99

Location	Top 10 Growers ($/carton)	Average All Growers ($/carton)
Contract packing	$0.52	$0.89
R&M and replacements	$0.74	$1.12
Fuel and oil	$0.26	$0.34
Finance	$0.24	$0.29
Field consumables	$0.19	$0.23
Other	$1.29	$1.53
Total	$13.55	$16.23

Table 28 demonstrates a comparison of the top 8 on-farm cost centres for the Top 10 growers in 2008/09 and 2009/10.

Table 28: Comparison of major per carton on-farm for the Top 10 growers in 2008/09 and 2009/10

Cost Category	Top 10 Growers 2008/09	Top 10 Growers 2009/10	Variation ($/carton)
Wages (employees) and contract labour services	$4.00	$4.90	$0.90
Packaging	$2.38	$2.35	-$0.03
Fertiliser and chemicals	$1.64	$1.93	$0.29
Wages and on costs (owners)	$1.72	$1.13	-$0.59
Contract packing	$0.00	$0.52	$0.52
R&M and replacements	$1.00	$0.74	-$0.26
Fuel and oil	$0.31	$0.26	-$0.05
Field consumables	$0.05	$0.19	$0.14
Total Top 8 On-Farm Cost ($/carton)	**$11.10**	**$12.02**	**$0.92**
Other	$0.93	$1.53	$0.60
Total On-Farm Costs ($/carton)	**$12.07**	**$13.55**	**$1.48**
Combined Labour Costs	**$5.72**	**$6.03**	**$0.31**

The key observations from Table 27 and Table 28 are:

1. The Top 10 growers are able to produce a 13kg equivalent carton of bananas for $2.68 less than that of the 'average' grower. This compares with (not shown in this table) with a figure of $3.13 in 08/09.

2. Wages (not owners) costs are $1.67 ($1.95 in 08/09) per carton cheaper than the average. Again the consistency of the difference confirms that labour management and efficiency is a key area where the Top 10 growers are better than the 'average' grower.

3. Wages (owners) are higher by $0.49 ($0.10 in 08/09) per carton on average. This is reflective of the proportionally higher level of family involvement in these businesses and / or the smaller size of some businesses in the Top 10.

4. Average packing costs are $0.52 for the Top 10 growers compared with $0.89 for the average. The lower cost is reflective of the fact that there is only 1 grower in the Top 10 who has fruit contract packed whereas there are 8 in the group of 57 who have fruit packed.

Therefore there is a lower percentage of growers in the Top 10 who have fruit contract packed. In 08/09 there were no growers who had their fruit packed at 'home'.

5. By combining the 2 labour costs (owners and non-owners) the cost per carton for the Top 10 growers is $1.46 lower than the average.

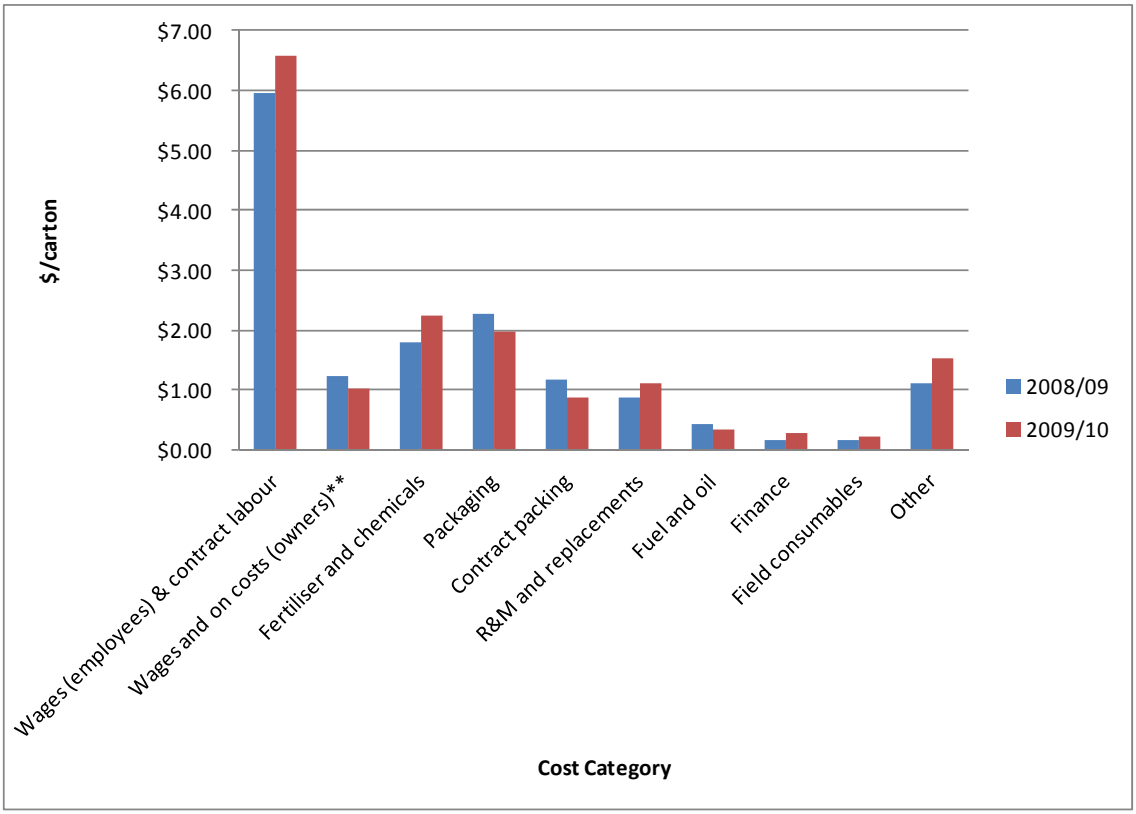
6. Repairs and maintenance ($0.38), fertilisers and chemicals ($0.31), fuel and oil ($0.08), finance ($0.05) and other ($0.24) were all lower for the Top 10 growers than the average. In 08/09 the majority of these costs varied little between the 2 groups. The 09/10 result is closer to what CDIPM anticipated as these Top 10 growers overall appear to be better business managers. So even though the costs per carton are lower, the fact that the Top 10 growers on average produce 31.2% more fruit per hectare, this is why their overall investment per hectare in on farm costs is higher.

7. Only packaging costs are higher for the Top 10 grower, with a difference of $0.36 per carton. This we believe is reflective of the lower proportion of the growers who have their fruit contract packed in the Top 10, rather than for any other reason.

8. By combining the 2 labour costs (owners and non-owners) the cost per carton for the Top 10 growers is $1.57 lower than the average. This compares closely with the result in 08/09 of $1.46 per carton difference.

Figure 20 demonstrates the comparison in costs between 2008/09 and 2009/10 of the 10 major cost centres associated with the production of bananas amongst the Top 10 growers.

Figure 20: Comparison of Top Ten On-Farm Costs per Carton for 2008/09 and 2009/10



Top Ten Growers - Fruit Size and Impact on Yield

In 2008/09 it was hypothesised by CDIPM that one of the contributing factors to the higher yield per hectare amongst the Top 10 growers was the fact that they packed 90.0% of their cartons as Extra Large compared with an average of 72.8% for all growers.

This hypothesis on the basis of the 2009/10 figures is not supported.

Figure 21 shows that in 2009/10 that the proportion of Extra Large packed by the Top 10 growers was in fact less than the other 2 groups. However, if we add in the Double Extra Large to Extra Large the relative proportions are equal.

Figure 22: Comparison of fruit sized packed in 2009/10 by the 3 different classes of growers

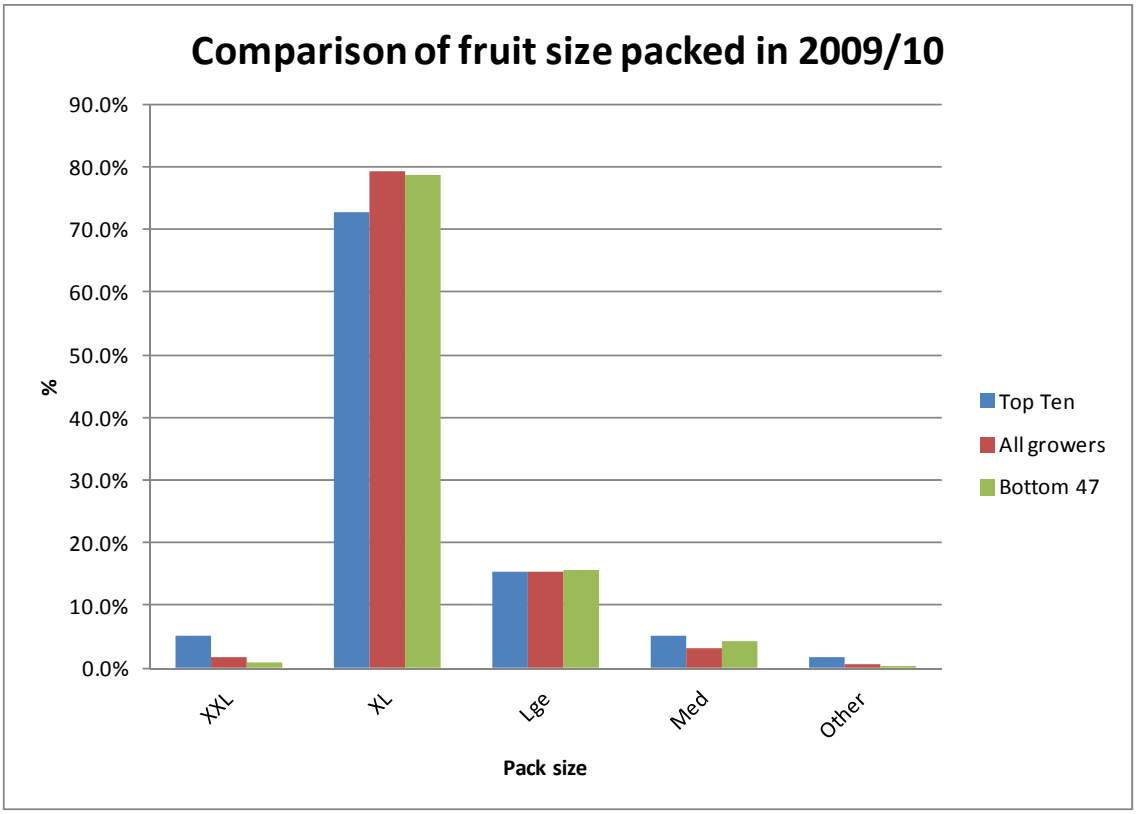
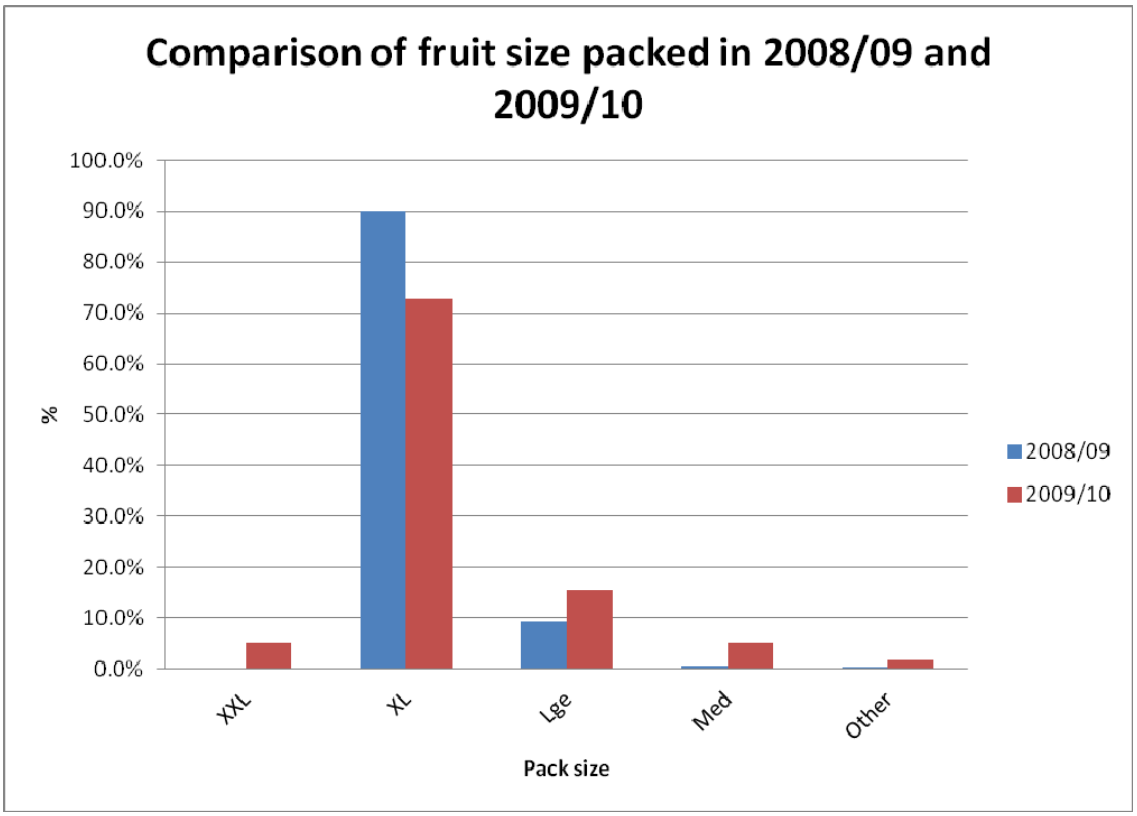


Figure 23 shows the size variation in packed bananas between 08/09 and 09/10. CDIPM did not seek to delve into reasons why average fruit size was smaller in 09/10. Anecdotal evidence seems to suggest that contributing factors may have been the cooler, wetter year and / or the fact that the average of the plantations were generally 1 year old as little replanting was done in 08/09.

Figure 23: Comparison of Pack Size for Top 10 Growers in 2008/09 and 2009/10



Top Ten Growers - Off-Farm Costs

An aspect that is not able to be analysed in detail is the off-farm costs per carton in detail. One of the principal components of off-farm costs is marketing fees and commissions. As has been discussed previously, there is limited transparency in respect of this cost centre. The majority of growers receive a 'net of marketing fees' return so in there is not even a cost centre created in the majority of cases.

There are 3 other off-farm costs incurred by banana growers. These are:

1. Industry levies
2. Ripening fees
3. Freight outwards

Industry levies are a gazetted / legislated cost and so should be equivalent amongst growers in each state, with the national levy the same throughout. However, the cost centre was not equal amongst growers which may warrant some investigation by the ABGC to ensure that all growers are paying the correct levy. Alternatively, the correct levy amount may be being paid by incorrectly reported in the grower's financials.

Ripening fees may or may not be charged by grower's customers, and are not being charged in the majority of cases. The standard cost appears to be $1.50 to $1.80 per carton.

In 2009/10 the average freight costs per 13kg carton equivalent for the Top 10 growers was $2.56 per carton ($2.61 in 2008/09).. This figure is lower than the average of $3.26 and $3.41 for the bottom 49 growers. There may be a number of explanations for this cost differential including:

1. The Top 10 growers place a greater emphasis on negotiating their freight charges compared with other growers.

2. The Top 10 growers may use alternative lower cost transport methods (true in 2 instances of growers in the Top 10)

3. On average, the Top 10 growers may be supplying markets closer to the source of production on average compared to others.

4. The Top 10 growers may be achieving greater pallet utilisation than their counterparts (ie. cartons per pallet).

Top Ten Growers – Human Resource Management

In 2009/10, the human resource management skills of each grower were assessed, across a broad range of parameters. Each grower received an human resource management skills rating of between 1 and 10 (with zero if the grower did not employ labour). The reader should be aware that the marketing skills rating assessment was not based on an objective assessment method, but rather the subjective assessment of CDIPM based on the feedback received during the interview process to a series of questions.

The average human resource management rating for all growers outside the Top 10 was 6.14 compared to 7.00. A test of significance between these 2 values should not be made due to the fact only 1 year of data has been analysed, however there would appear to be evidence of a causal link between net profit per planted hectare and human resource management.

Some of the observations from the data compiled from the human resource management component of the project include:

1. 9 out of 10 growers had a low or moderately low reliance on contract labour to perform field tasks. The one grower who had a higher rating had a unique operational model where the grower still had a very high level of daily control of field activities.

2. 10 out of 10 growers in the Top 10 had a high or very high dependence on permanent workers in the operation of their business. This figure is directly correlated with having a low level of staff turnover. Therefore the Top 10 businesses want to employ workers permanently and are able to keep them for long periods.

3. All except one grower had a high or very high apparent level of co-operation when working with their employees. That is, it would appear they do not have an adversarial relationship with their team. This CDIPM believes is a major contributor the ratings achieved in (2).

4. There does not appear to be any correlation between what workers are paid and whether or not the grower is in the Top 10. Similarly, if a grower has a high level of specialisation of critical tasks or not and business profitability is not clearly defined either. This may be due to the fact that for smaller businesses there is a tendency not to have specialists where as it is necessary for the larger sized businesses.

Top Ten Growers – Marketing Skills

In 2009/10, the marketing skills of each grower were assessed, across a broad range of parameters. Each grower received an marketing skills rating of between 1 and 10 (with 1 being very low and 10 being excellent or highly skilled). The reader should be aware that the marketing skills rating assessment was not based on an objective assessment method, but rather the subjective

assessment of CDIPM based on the feedback received during the interview process to a series of questions.

The average rate for the Top 10 growers was 6.60 and the average of the remaining growers the value was 6.22. This suggests limited variation in the overall skills of growers inside or outside the Top 10 group.

Observations on the Top 10 Growers

Similarly to 2008/09, the analysis of the data shows clearly that individual grower performance in terms of productivity, sales returns and costs of production, varies significantly from grower to grower. Whilst the Top 10 growers compare well in financial return terms against other horticultural growers, there is a significant portion of growers whose performance does not. Like the 2008/09, at least the first 3 quarters of 2009/10 were seen anecdotally as being quite good. The financial performance of the industry, again anecdotally, nosedived from March / April, 2010 where there was a period of sustained low price up to when Cyclone Yasi hit the North Queensland coast in January, 2011. Therefore the vast majority of growers will have experienced very poor financial performance in 2010/11 if they lived in the Wet Tropics and conversely strong financial performance if they lived in regions other than the Wet Tropics.

Previous graphs and tables demonstrate that high net profits per planted hectare are not necessarily dependant on location, variety or business size (although small growers and the very largest growers are not in the Top 10). The subsequent sections will analyze further why some growers are able to generate high levels of business performance whilst others do not.

When compared with the average of 57 growers the Top 10 growers were shown to:

1. be 343.9% more profitable in terms of net profit per hectare.
2. be 31.2 % more productive in terms of cartons per hectare (39.6% in 2008/09)
3. have 2.5 % higher net sales returns per carton (7.1% in 2008/09)
4. have 19.8% lower on-farm costs production costs per carton (25.5% in 2008/09)
5. have labour costs (owners, employees and contractors) 26.0% lower per carton (25.55 in 2008/09)

In 2008/09, CDIPM made a total of 10 observations of why the Top 10 growers were in that position. With the analysis of the 2009/10 data, Table 29 will examine those options to see if they can be verified or discounted. There will also be some new observations on why the Top 10 are leading growers.

Table 29: Comparisons between General Characteristics of the Top 10 Growers, 2008/09 and 2009/10

Top Ten Characteristic Identified in 2008/09	Comment based on Assessment of 2009/10 Data
Business owners have a higher level of motivation and therefore better work ethic than others	Not an assessable characteristic however observations of the business owners continue to support this view. Would expect that the average hours worked by the principals would be higher than their counterparts or if not that the 'workload' is shared amongst many family members.
Business owners have a 'hands-on' approach in the daily farm operations. No corporate farms or very large farms were in the Top 10 partly because the owners cannot be 'across' all aspects' of the business, all of the time	All except 1 of the Top 10 growers works for a period in the field or in close contact with their workers. All except one grower (the grower who contract packs) is well across all aspects of the daily operation of their business.
Business owners have developed remuneration	Remuneration or bonus structures are not

Top Ten Characteristic Identified in 2008/09	Comment based on Assessment of 2009/10 Data
and reward systems that motivate and reward staff for above 'average' contributions	elements that are superior or higher amongst any particular grower group. The focus of the Top 10 growers is to provide regular / consistent work hours to their staff and not an ad hoc approach to engaging staff just when the work is there. By doing this, the Top 10 growers have a higher proportion of permanent workers, which in turns results in greater knowledge of the farming and packing activities / processes that the grower wishes to have enacted. Therefore the Top 10 grower has a greater focus on scheduling farming activities so as to remove the peaks and troughs associated with production and therefore employment needs. Further, the Top 10 growers universally have a more co-operative approach to day-to-day relationships with their staff
Additionally owners by working closely with their staff, have developed a 'lead by example' approach. That is, these business owners work harder than anyone else in the business	Although not an assessable characteristic, there is no doubt that the Top 10 growers do have a 'lead by example' approach.
Business owners have a stronger focus on the marketing of their product. That is, they are more aware of what is happening in the major metropolitan market places on a daily or weekly basis, so have better 'market intelligence'. They visit the market places more frequently and they communicate there greater market knowledge to their customers / marketers	Not wholly supported by the evidence from the marketing skills component of the analysis. As a general comment the marketing skills of the vast majority of all growers have significant scope for employment. There are a number of growers who have in place excellent marketing strategies, but who may not be in the Top 10 for a variety of reasons.
Business owners have developed a clear picture of the 'recipe' that they follow in terms of production and packing	This view is again supported mainly as evidenced by the low turnover of staff that the majority of the Top 10 businesses have. Due to the fact that the grower is able to plan / schedule activities these growers are able to provide regular work hours to staff which in turn assists the grower to undertake activities as and when required as he/she has a firm understanding of how long it should require to undertake a particular activity.
Business owners have a clear understanding of what is required in the business on daily, weekly and monthly basis	Please refer to above point. Top 10 growers have a firm understanding of the program of activities that is required on a daily, weekly and monthly basis and so do the majority of the staff that work inside of these businesses. Although not assessed it would be CDIPM's view that staff respond positively to having a clear direction in respect of what is required of them.
Business owners have extended this systems approach from the paddock and to packing shed to having a greater knowledge through the development of information systems (reports, spreadsheets, recording devices etc) in their business	Not wholly supported by the observations in 2009/10. Each of the Top 10 growers do have a comparatively good financial recording system, however there did not appear to be too much difference between the Top 10 and other growers in relation to KPI assessments and other business analysis tools, other than examining the financial performance of the business.
Based on the fact that none of the growers who were in the Top 10 were contract packer	Not true for 2009/10 as one grower did have their fruit packed at a central packing shed. The

Top Ten Characteristic Identified in 2008/09	Comment based on Assessment of 2009/10 Data
suppliers, that financially growers may be better off to pack their own fruit	remainder of the growers who had fruit contract packed had comparatively poor financial returns.
If net return per hectare is the sole criteria used to evaluate business 'success' businesses who pack less than 50k cartons per annum are less likely to be successful than larger growers	Still the case in 2009/10 with only 2 growers out of 24 in the Top 10 who produced less than 50k cartons . Also there were no growers with production of more than 180k cartons in the Top 10 in 2009/10

Production / Plantation Data

This section will outline the findings associated with the non-financial component of this research project. Therefore this section encompasses findings associated with general business data, production operations (production to harvest), packing, marketing and human resource management skills. Where appropriate, comparisons with the 2008/09 year will be made.

Farm Location & Production

The location of the 59 growers included in the data analysis combined with their business size as represented by the number of cartons packed is presented in Table 30.

Table 30: Size and Location of Contributing Growers

Location	<50k cartons	50k-<75k cartons	75k-<150k cartons	>150k cartons
Atherton Tablelands	4	1	1	1
Innisfail	7	6	10	3
Tully / Mission Beach	3	4	-	7
Kennedy Valley	-	1	-	1
Far Northern NSW	3	-	-	-
Northern NSW	4	-	-	-
Carnarvon	3	-	-	-
Total	**24**	**12**	**11**	**12**

The table shows in CDIPM'S opinion good distribution of business sizes. The larger number of smaller sized businesses we believe is indicative of the nature of the industry. However in the absence of any verifiable data this assertion cannot be tested. The number of comparatively large businesses may, based on CDIPM'S observation, over represent the number of businesses that are in this category.

There are 7 growers from NSW which significantly under represents that state based on grower numbers, however based on production volume the number of growers is over representative. This is the same case in WA.

Of the 59 contributors to the study, 39 of these growers were participants in Round I of the study.

The total area farmed by the 59 growers in the study was 3,386ha which represents 30.8% of the ABGC estimated area under production in Australia.

Farm Information

The average area currently used for banana production included in the study was 57.83ha (51.22ha in 2008/09), with 95.2% (93.4% in 2008/09) of the farm planted to bananas. . The distribution of farm sizes is not able to be reported as it may identify larger growers. The average block size per farm is 4.76ha (4.97ha in 2008/09).

The Cavendish variety is planted on 90% (97% in 2008/09) of the total area planted and with 10% to Lady Finger (93% in 2008/09). There are no growers in the sample producing the varieties Gold Finger, Ducasse or Plantain in any reportable quantities. 95.6% of the total reported volume of production is Cavendish with Lady Fingers representing just over 4.4%.

Four of the growers were considered to be under corporate ownership. That is, the owners of the business were not involved in the day-to-day management of the farming operation.

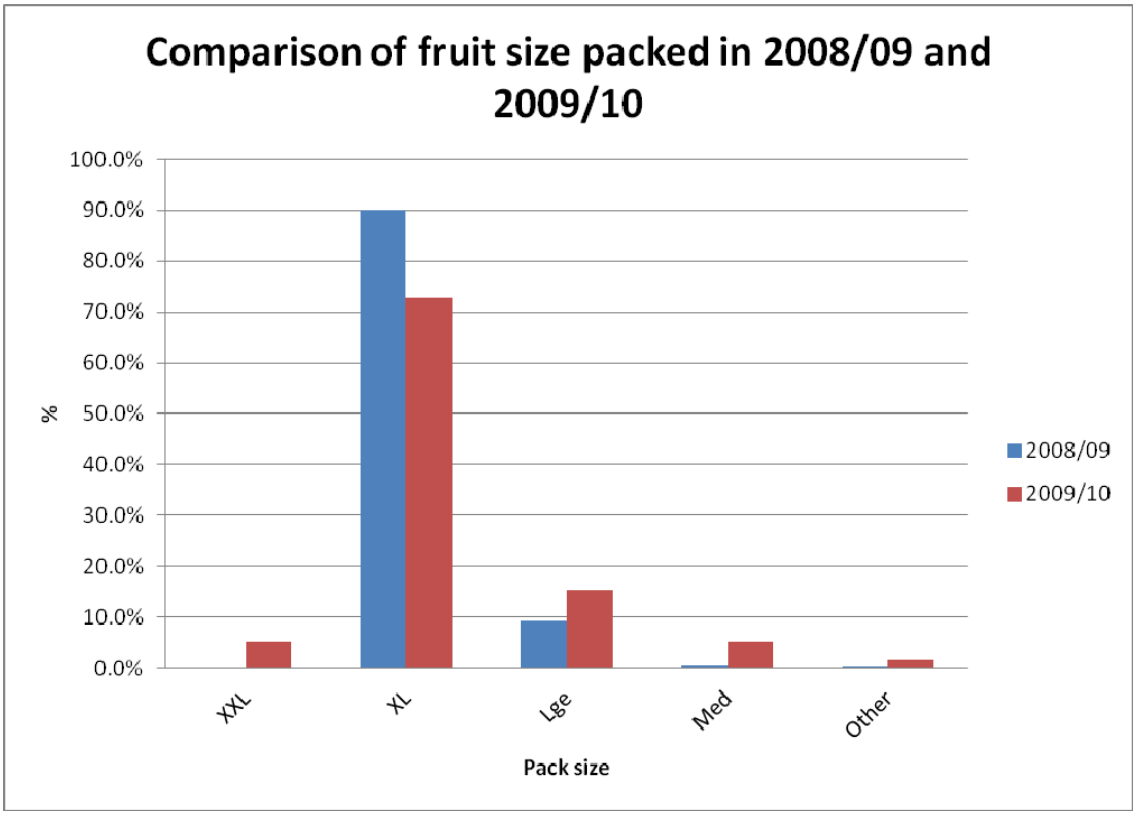
A total of 9 growers supplied a central packhouse. Two of these growers supplied a grower owned packhouse and 7 growers supplied a corporate packhouse. The remaining 50 growers all packed their own bananas with one grower packed bananas on behalf of others.

Cartons Grown and Size Distribution

The 43 Queensland Cavendish growers in this analysis produced on average 114,193 cartons of Cavendish bananas in 2009/10. In 2009/10, the average production from those growers who principally grew Lady Fingers was 39,875 (13kg equivalent) cartons of Lady Fingers and 5,177 cartons of Cavendish (as secondary production). The Sub-Tropical Cavendish growers were much smaller than their Queensland counterparts producing 15,017 cartons on average.

The average fruit size of fruit packed by growers in 2008/09 and 2009/10 is shown below in Figure 24. As can be seen the average pack size is smaller in 2009/10. Anecdotal evidence seems to suggest that contributing factors may have been the cooler, wetter year and / or the fact that the average of the plantations were generally 1 year old as little replanting was done in 08/09 and so plant vigour has been lost.

Figure 24: Comparison of Pack Size for Top 10 Growers in 2008/09 and 2009/10



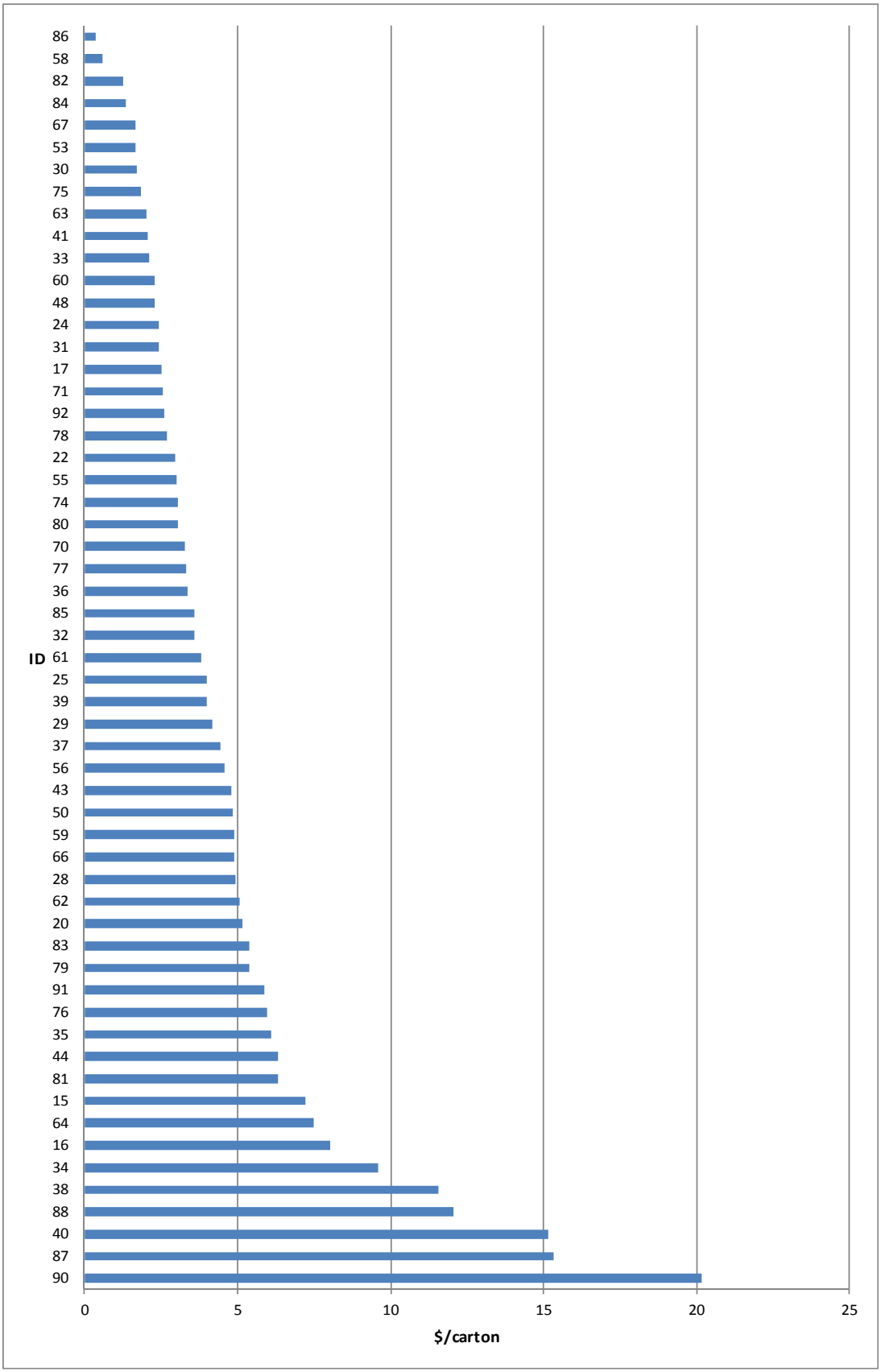
Age of Plantation

The correlation between net profit per planted hectare and average age of plantation is relatively high at -0.47, as plantation age goes up the net profit goes down. This correlation is for a single year and so more confidence on plantation age being a significant factor in determining net profit is required over multiple years.

The average age of plantations is 4.29 years. For the Top 10 growers the average plantation age ranged from 1.85 to 4.93 years with the mean being 3.24 years.

The average age of plantation for each grower's business is presented in Figure 25.

Figure 25: Average Age of Plantation of Growers Plantations in Years – 2009/10



Planting Material

As Table 31 demonstrates, 69% of the blocks planted are done using bits sourced from their own plantation. Reasons given for why growers use their own planting material is cost, convenience and desire to maintain a varietal line. A number of growers commented adversely about using tissue culture. Some growers commented on product supply issues, toughness / performance in difficult production conditions and cost.

There appears a small movement towards increased use of tissue culture. Advocates for tissue culture (23% of total area planted) stated their reasons using it were consistency of product appearance and shape, evenness of crop harvest (also cited as a disadvantage by some) and another job (bit harvesting) that doesn't need to be done by the grower.

Table 31: Grower Distribution of Results for Planting Material Usage - 2009

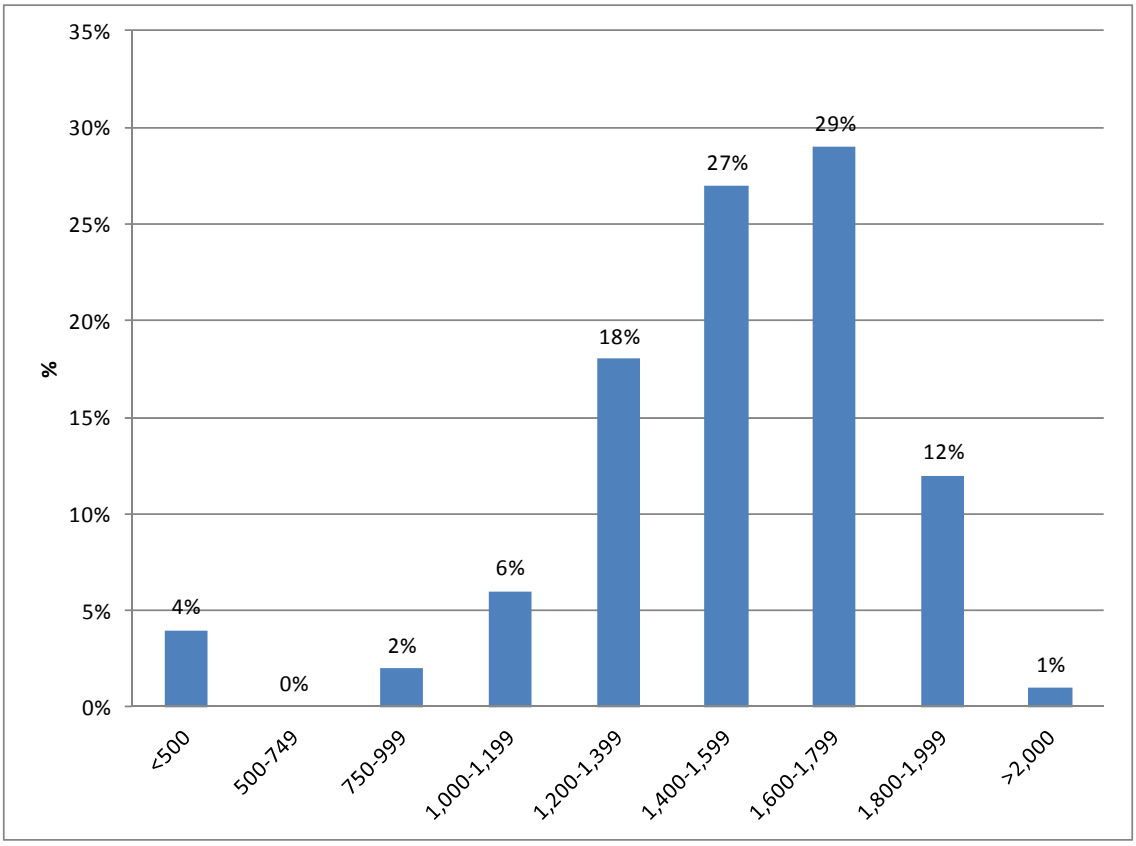
KPI	% - 2008/09	% - 2009/10
% Tissue culture external	20	23
% Tissue culture with own nursery	1	1
% Bits from own plantation	71	69
% Bits from another plantation	5	5
% Pots	3	2

Plant Density at 1st Ratoon

A central production issue facing growers is at what density to plant bananas to maximize production volume and product quality.

Figure 26 shows the distribution of plant densities for every block grown by the 59 growers. The principal plant densities range from 1,200-1,399 to 1,800-1,999 plants per hectare at the point of 1st ratoon, with 1,400-1,799 accounting for 56% of plantings. Plant densities at less than 1,199 plants per hectare are used for Lady Fingers. Growers in Western Australia use the highest plant densities to create a micro climate for their bananas in the dry production regions. Further, plants in Western Australia are small by comparison and give smaller bunches so in order to achieve better yields densities >2000 and up to 4,000 plants per hectare are used.

Figure 26: Distribution of Plant Densities at 1st Ratoon for All Growers 2009/10



Observations of the Top 10 growers indicate that there is no density which their bananas are planted at that differs from other growers.

The density at which grows plant is often determined by the spacings at which mains and sub-mains are located. Growers are generally planting at wider row spacings to allow for more efficient movement of vehicles down the rows and in order to minimize damage to bunches and / or to increase the amount of light that is able to enter the orchard so as to reduce potential leaf disease and /or to increase fruit bunch weights. Growers may compensate with narrower inter-tree spacings to maintain plant numbers or may keep the spacings the same thereby reducing plant numbers per hectare.

Irrigation Method

64% of growers of the area planted to bananas is irrigated using micro-sprinklers (59% in 2008/09). Dripper tape (20%) and overhead irrigation (10%) are the other 2 main methods (19% and 13% respectively in 2008/09). This trend is supported by anecdotal evidence of the movement towards more and more bananas being planted under micro sprinklers. Reasons why growers use micro-sprinklers were cited as:

1. Ability to fertigate. With fertigation growers are not going to 'lose' solid fertilizer applications during periods of heavy rainfall down streams and onto the reef. So environmentally fertigation would appear to provide greater protection for the reef and its environments.

2. Ability to wash in solid fertilisers

3. Better coverage of the soil profile

4. Ease of maintenance (all above ground).

5. More timely applications of irrigation can be applied, especially during hot weather.

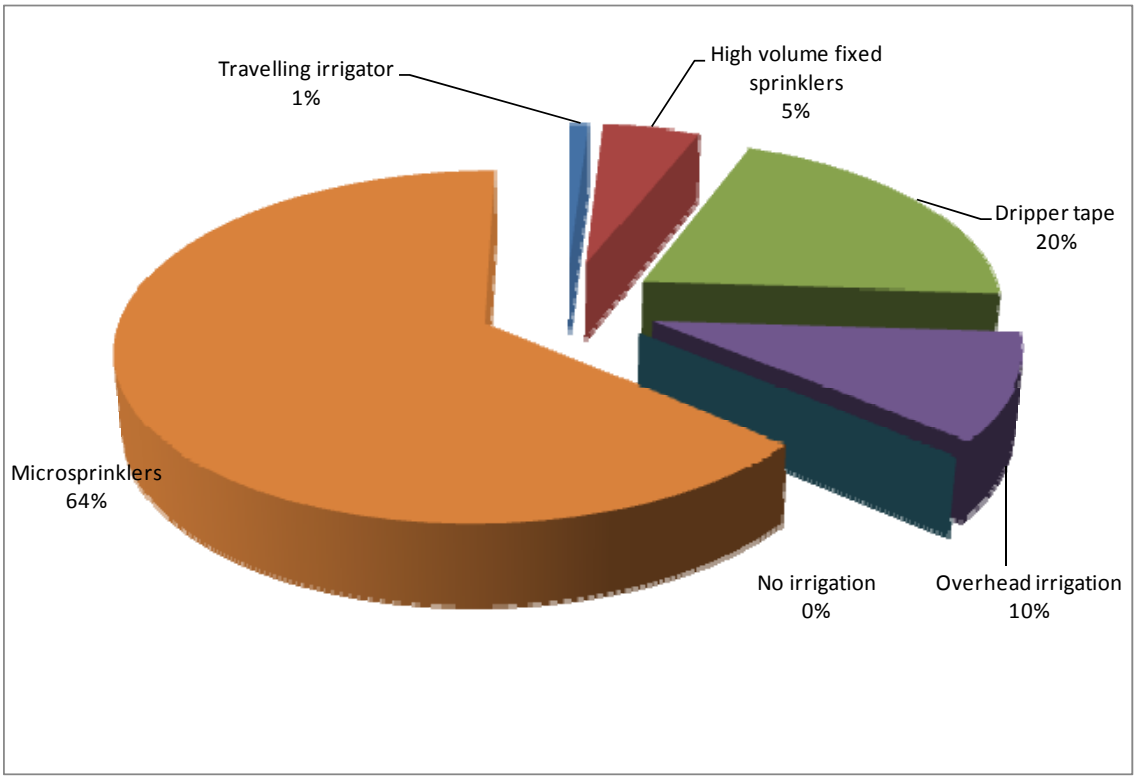
Growers use dripper tape for the following reasons:

1. Relatively low cost
2. Ease of maintenance (don't have to repair sprinklers)
3. Irrigation efficiency where growers have low levels of available water.

Although 10% of plantations still use overhead irrigation, these growers would prefer or are in the process of transitioning to drip or micro-sprinklers. The reason why they have not transitioned over as yet is the cost of doing so. Maintenance and water wastage, particularly as water management plans are introduced, are the principal reasons for wanting to move out of overhead irrigation.

Figure 27 shows the distribution of principal irrigation methods in use by banana growers.

Figure 27: Grower Distribution of Results for Principal Irrigation Method Used - 2009

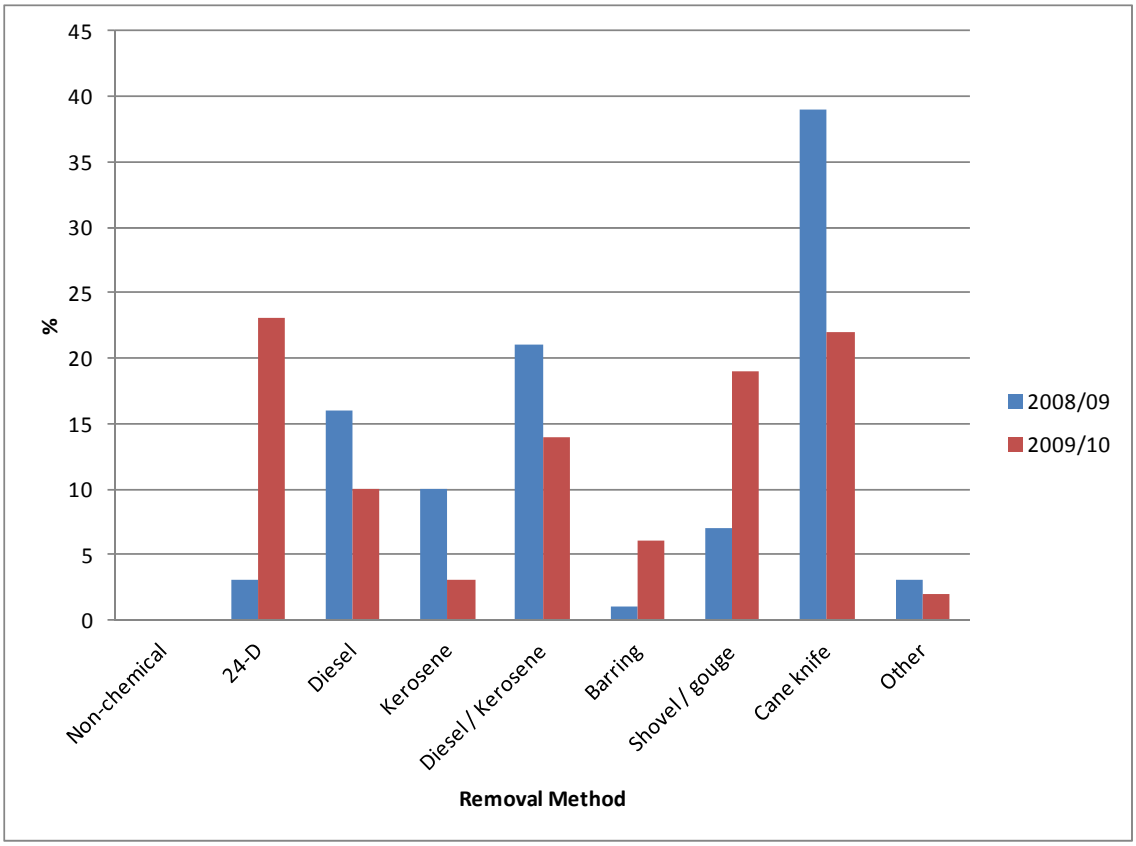


Banana Sucker Removal

Growers identified a wide variety of methods to remove unwanted banana suckers. Further, the methods used often vary from the plant crop to subsequent ratoon crops.

Figure 28 shows the relative proportions of the various sucker removal methods used for plant and ratoon crops.

Figure 28:% Use of Banana Sucker Removal Methods – Plant & Ratoon Crops – 2009/10



Some growers place a high degree of focus on sucker selection in the belief that the position and health of the sucker has a significant impact on harvest volumes, fruit quality and fruit losses. They may therefore only permit specialized employees to undertake the marking of those suckers to be removed and those that will remain.

In the period 2008/09 to 2009/10 there are more growers not using 24D to control suckers than previously. Grower concerns regarding the use of 24D include:

1. Causes red spider mite population explosions and more issues with nematodes (and subsequent lodging).

2. Concerns about general impact on the environment.

3. Concerns about concerns to workers (and themselves) regarding its use.

Fertiliser Application

Growers utilise 3 systems for the application of fertilisers, namely solid /ground application, fertigation or foliar fertilisers or a combination of both. Many growers have definite views on the preferred method of application method.

Growers may use solid / ground or fertigation or a combination of both. Typically growers will use solids during wet periods when it is not necessary to irrigation and will then revert to fertigation during the drier months. On this basis there is a definite trend toward summer – ground fertilizer, foliar fertilizer – winter / autumn and possibly winter although some growers won't apply any fertilizers at all during winter due to the perceived lack of plant response.

No grower uses foliar fertilisers as the sole method of application due to the volume of nutrients that are required.

The general movement towards the use of fertigation or at least a combination fertigation / solid fertilizer continues to grow based on our evidence. Reasons given by growers for why they have moved over totally or principally to fertigation are:

1. More targeted use of fertilizer with lower rates per hectare able to be used.

2. Less potential for fertilizer losses due to high intensity rainfall events (in the event they are using solids).

3. Quicker for the plant to take up.

4. Easier / more convenient to use as they only have to work from a central point.

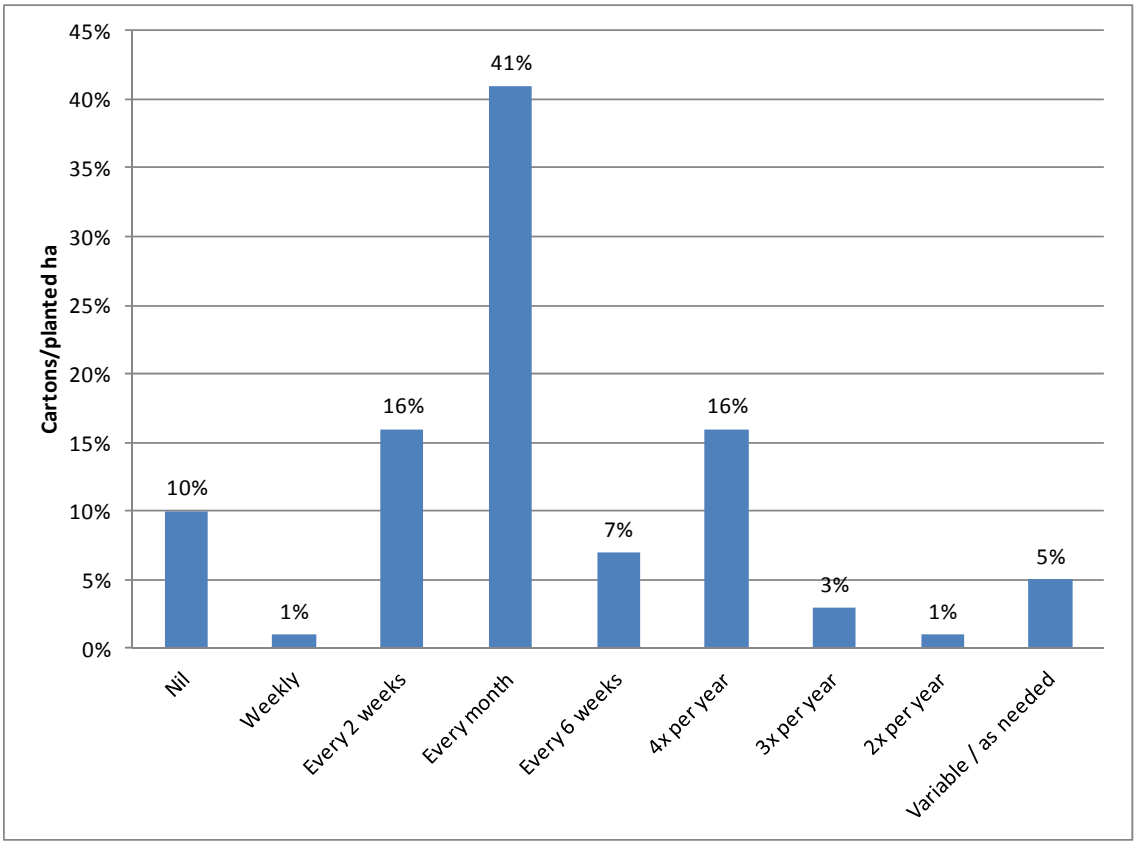
5. Less traffic in the plantation = less potential damage to bunches.

A number of growers, particularly those in WA, have developed fully automated irrigation systems where plants receive fertilizer every time irrigation is applied, which in their case is up to 3 times per day.

Growers who are dedicated to the use of solid fertilisers do so principally out of convenience or because they are not wishing to go to the added capital expense. Also, growers who use drippers often do not fertigate due to the limit application area that drippers can 'wet'.

The frequency of solid fertilizer application is presented in Figure 29.

Figure 29: Frequency of Application of Solid Fertilisers – 2009/10



Sixty percent of growers apply their solid fertilisers monthly or more frequently. There is an apparent tendency of growers to reduce the period between fertilizer applications in order to reduce the risk of high rainfall events washing fertilizer away and polluting waterways. Less frequent applications also tend to give trees a 'hit' of fertilizer which may not be ideal as the skins of the banana become soft with excessive levels of nitrogen.

Soil Borne Pests

There are 3 principal soil borne pests which banana growers may control,being nematodes, cane beetle and weevil borers. Some growers, due to location and / or soil type, may elect not to treat for these pests. Appendix 6 provides details on the methods used by growers to control each of these pests.

Table 32 shows the responses to whether or not they seek to control nematodes, cane beetles or weevil borers.

Table 32: Soil Borne Pests – Do Growers Undertake Control Measures for Selected Pests? – 2008/09 and 2010

KPI Question	2008/09 (%)	2009/10 (%)
Have you undertaken control measures for nematodes in the last 12 months - Yes	33	29
Have you undertaken control measures for nematodes in the last 12 months - No	67	71
Have you treated for cane beetle in the last 12 months - Yes	46	59
Have you treated for cane beetle in the last 12 months – No	54	41
Have you treated for weevil borer in the last 12 months - Yes	69	71

KPI Question	2008/09 (%)	2009/10 (%)
Have you treated for weevil borer in the last 12 months - No	31	29

Over the 2 year period there has been little change in terms of the percentage of growers who have sought to control nematodes (33% down 29%) and weevil borer (69% to 71%). There are significantly more growers however who have had to control for cane beetle (46% to 59%). Both cane beetle and weevil borer are generally controlled together, although one or the other is generally the target.

CDIPM focused on application methods, time of the year for applications and strategies with growers. There is considerable detail in the qualitative section of this report regarding each of these matters.

Agronomist Services

Table 33 provides a summary of the use or otherwise of agronomists by growers. There are relatively equal percentages of growers who are not using agronomists or are using the services of private companies / individuals or using the services of one employed by a chemical company. There is little change between the 2 years. Observations of the Top 10 growers suggest that these companies tend to use agronomists at a higher rate than the standard population

Table 33: Soil Borne Pests – Do Growers Undertake Control Measures for Selected Pests? 2008/09 and 2009/10

KPI Question	2008/09 (%)	2009/10 (%)
Have you used the services of an agronomist in the last 12 months? Yes – private / company individual (%)	34	40
Have you used the services of an agronomist in the last 12 months? Yes – employee of a chemical company (%)	30	26
Have you used the services of an agronomist in the last 12 months? Yes – Inhouse (%)	7	4
Have you used the services of an agronomist in the last 12 months? No (%)	29	31

Our observations concluded that chemical company agronomists were generally only advising on the use of fertilisers. Private individuals provided a range of services including fertilizer advice, pest and disease monitoring, chemical use advice and crop management programs.

Growers not using agronomists did so as they believed they do not add sufficient value to justify their engagement.

Pesticide and Fungicide Spray Frequency

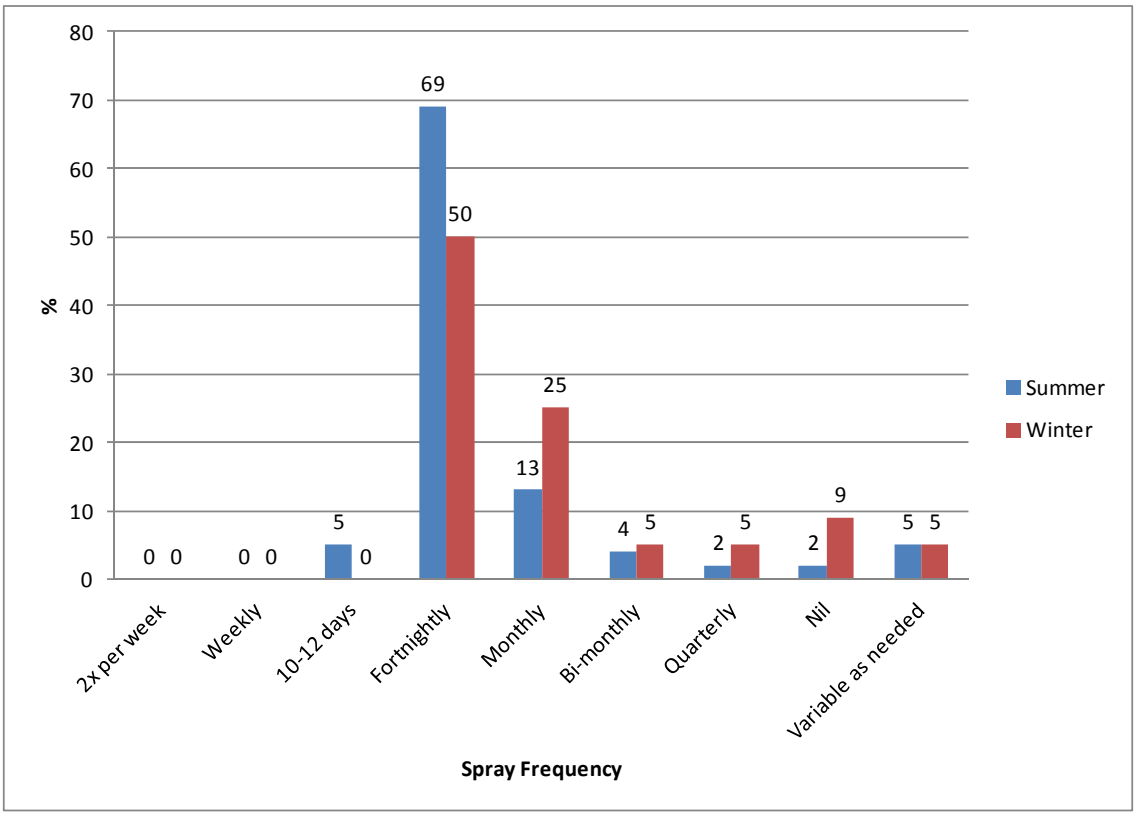
Pesticide and fungicide spray frequency varied depending on the farm location. In WA, growers rarely have a need to spray for pests and never for fungicides due to the dry nature of the climate. NSW growers had low levels of chemical applications due to the cooler climate and less prevalence of fungal diseases in comparison to the hotter, wetter and more humid North Queensland growers.

Growers in North Queensland generally spray fortnightly during summer. In winter, growers apply chemicals every 2 to 4 weeks, due to the generally lower disease pressure. Spray frequency in North Queensland varies considerably depending on the environmental conditions during the season. Warm, wet years will result in higher spray frequencies compared to cooler, dry and clear years.

The majority of North Queensland Wet Tropics growers 'generally' follow the Bayer program, with greater adherence in summer than winter where growers tend to 'miss' a number of sprays because in their opinion there is little need. Growers on the Atherton Tableland do not spray as frequently due to the lower levels of rainfall, clearer days and lower humidity levels.

Figure 30 demonstrates the frequency of pesticide and fungicide application during summer and winter.

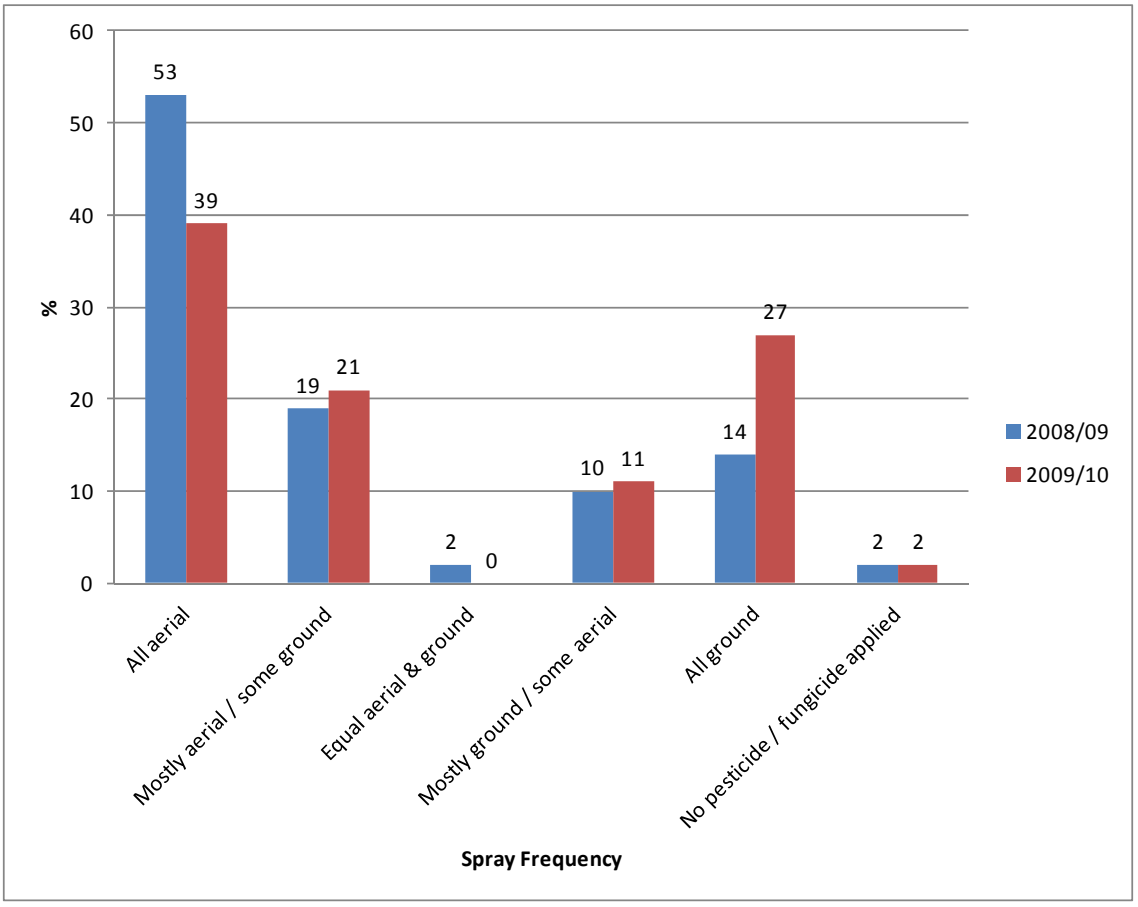
Figure 30: Comparison of Frequency of Pesticide/fungicide Application during Summer and Winter – 2009/10



Pesticide and Fungicide Application Method/s

Figure 31 shows the apparent trend away from using aerial application to more ground application of pesticides and fungicides. Some growers expressed concerns that the aerial application methods were not providing as good a level of control as what ground rig applications do. However 60% of growers still use aerial as their principal control method. The general philosophy that now seems to be emerging is that a combined approach, ground and aerial, provides for a more comprehensive control program. Many growers commented that they will always have some aerial application component, particularly in the Wet Tropics, for use when the weather is wet and so use of ground rigs is difficult.

Figure 31: Pesticide / fungicide Application Method 2008/09 and 2009/10



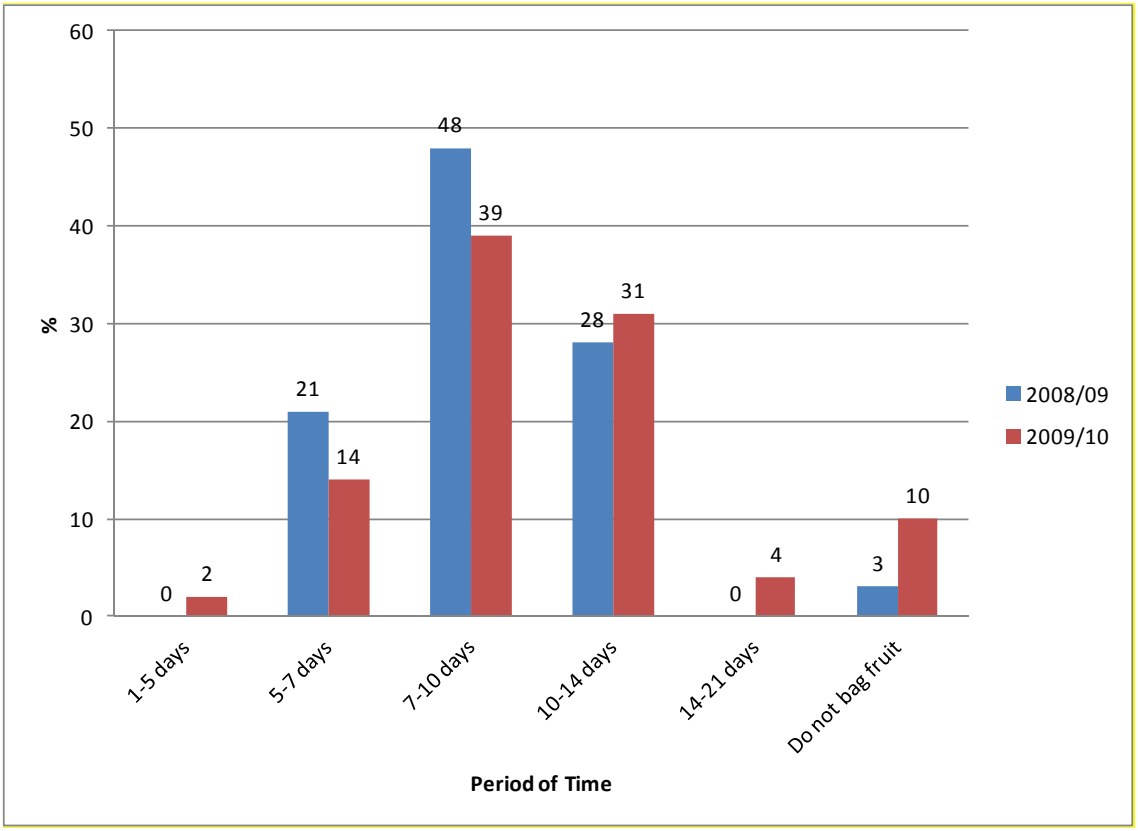
Amongst the Top 10 growers there were 3 growers who used aerial exclusively, 3 growers who mostly used aerial with some ground, 3 who used all ground and 1 grower who used ground mostly with some aerial. On this basis there can be seen no statistical link between profitability and application method.

Bell Emergence and Bagging

Figure 32 shows the period of time between bell injection and bagging. There would appear based on these graphs a trend towards slightly longer intervals between bell injection and bagging. Our observations suggest that this may be a false trend however. There appears to be a tendency in areas where flying foxes or birds are a problem that bagging occurs much earlier in order to protect the bell. These growers may then undertake a 2 stage process of bagging and bunch trimming and may or may not use 2 bags, a cotton liner inner and plastic bag outer.

Ten percent of growers do not bag their fruit. None of these growers are in North Queensland. Some growers in NSW do not bag as there is less pressure from scab moth in that state. Bagging for scab moth or other predators is not practiced in WA due to low pest pressures.

Figure 32: Length of Period from Bell Injecting to Bagging – 2008/09 and 2009/10



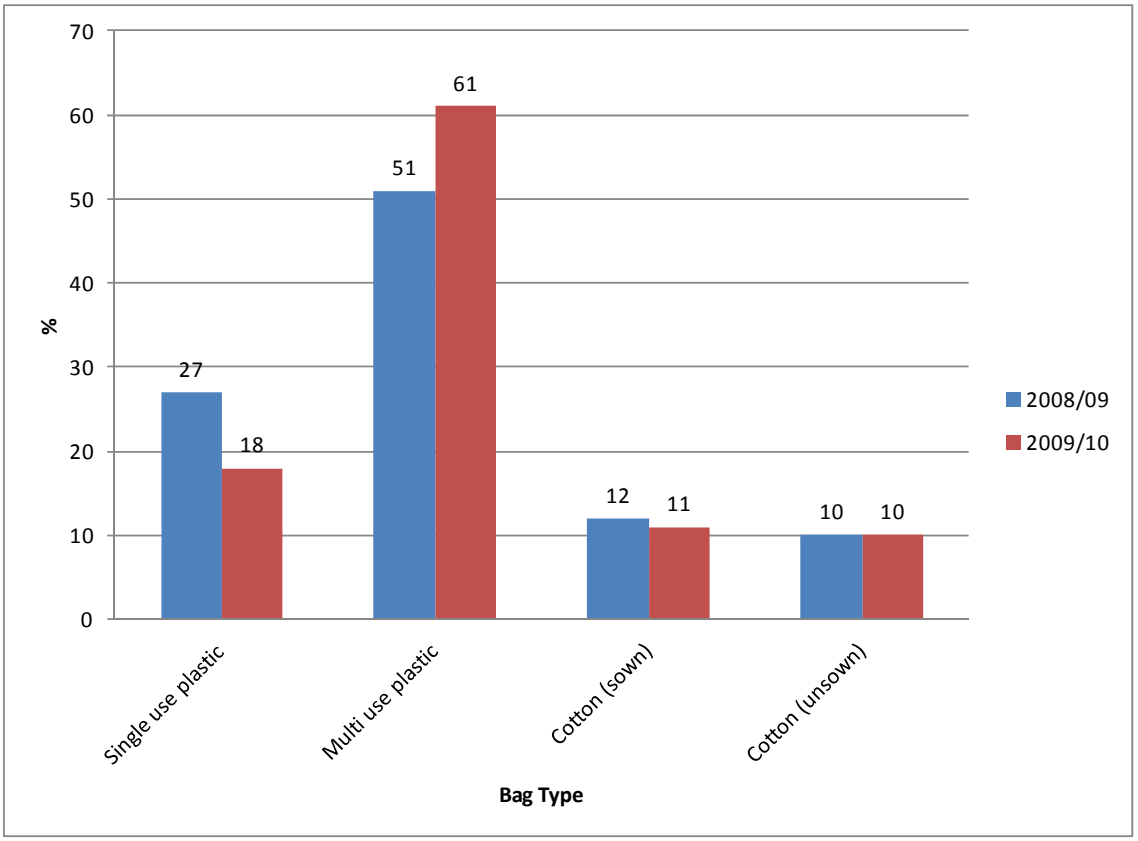
Bag Type Used

Growers use 4 principal types of bags for bagging. These being single use plastic, coax or multi use plastic bags, sown cotton bags with a plastic outer and unsown cotton bags. Figure 32 shows that the principal bag type used is still a coax bag. Growers appear uncertain if the added cost of cotton bags –sown or unsown, is justified in the terms of improved fruit quality. A number of 'convertees' are strong advocates of cotton bags, with one grower indicating that if they are able to harvest an extra hand per bunch on average, the added costs are justified in one use.

With respect to the Top 10 growers, there were 5 who used multi-plastic bags only, 2 who had single use plastic bag and 3 growers who used a combination of plastic and cotton. This confirms there is no direct linkage between bag type and profitability.

Certainly anecdotal evidence from growers who are using on a commercial basis or as a trial appear satisfied that the quality of fruit produced using cotton bags is superior to their older methods. There has been no calculations undertaken by growers to examine the cost (associated with the bag and application time) compared to the benefit (associated with fruit quality and packout). A number of cotton bag users commented that the quality of the bag is important with a number of poor 'models' having been put out into the market place previously. These growers also have the view that those growers who can consistently supply how quality fruit to the marketplace will reap the advantages during periods of high supply.

Figure 33: Principal Bag Type Used – 2008/09 and 2009/10



Bunch Identification Method

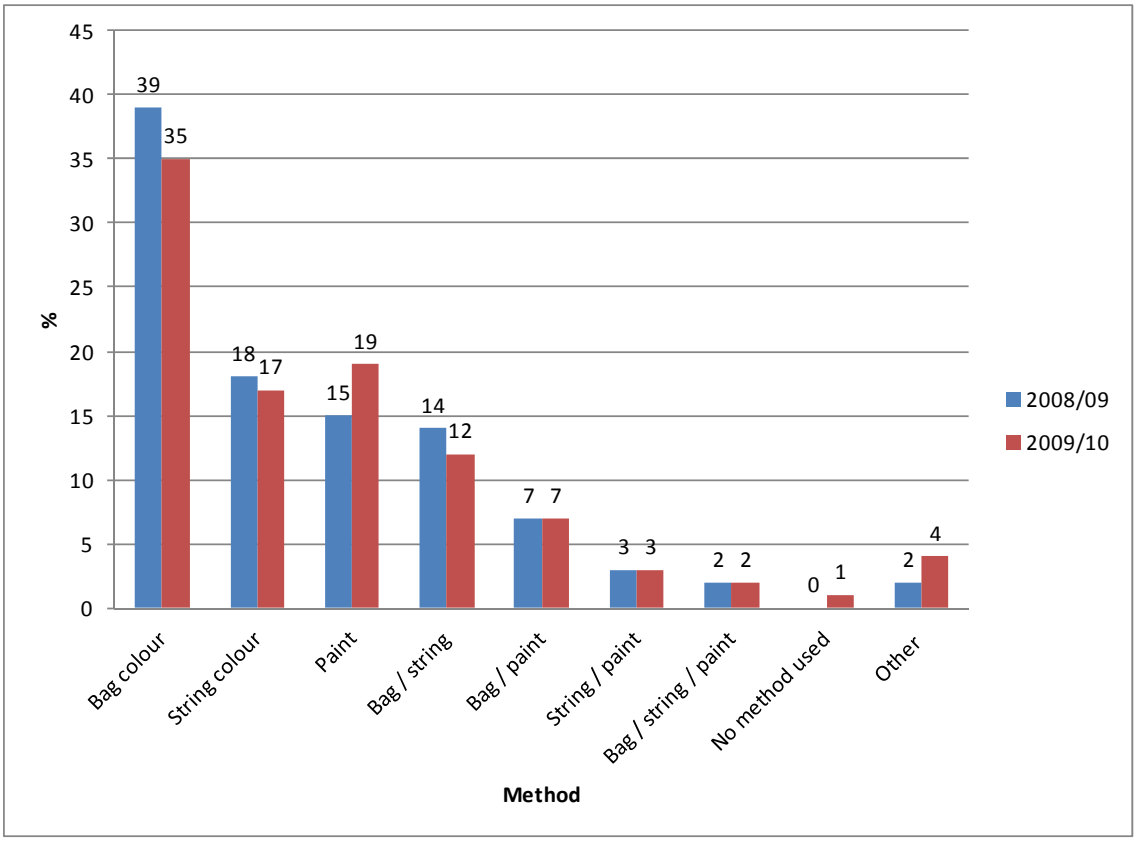
Banana growers utilise an extensive array of strategies for bunch age identification, as demonstrated in Figure 33. Between 2008/09 and 2009/10 there appeared to be little variation in the relative proportions that each method was used by growers. Bunch identification for the majority of growers is a traditional operation and so not subject to change often hence the similar percentages for each method used across the 2 years.

Bunch identification is a critical part of the production operation in terms of ensuring that the harvesters minimize the amount of time spent on assessing which bunches are ready for harvest or not. A 'cumbersome' method will result in lower harvest rates and therefore a higher per unit cost of production.

An inspection of the Top 10 growers shows an array of methods used by them, again confirming the fact that there is no single bunch identification method that is the most efficient. Harvesting costs represent a significant component of the total labour costs of operating a banana farm and so any method that results in lower costs will have an impact on the bottom line.

CDIPM's general view however is that many growers overcomplicate the bunch identification system that they have in place and that either bag, bag / string, bag / paint or paint alone would appear to be suitable methods. A time and motion study with an associated cost benefit analysis may be warranted.

Figure 34: Principal Bunch Age Identification Method/s – 2008/09 and 2009/10



Packing Systems

Introduction

The majority of questions relating to packing systems are discussed in considerable detail in the qualitative and industry group reports which are listed in Appendix 8 and Appendix 9. These qualitative questions relate to how growers handle bananas at receival, all the way through the handling process to packing, palletizing, precooling and transportation.

There is a number of quantitative responses with respect to packing which will be discussed in the subsequent sections.

The variation in packing productivity is directly related to the management style of the grower and the 'product flow' technologies in place in each packing shed. Further work is recommended in this area and is discussed in greater detail in the Recommendations section.

Packing Equipment

Growers principally use 2 packing systems for bananas: rotary wheels (55%) and water and belt conveyors (59%). Generally, smaller growers use a rotary wheel with larger growers using water and belt conveyors. The reasons for this trend are:

1. The capital cost of rotary wheels is low thus suiting smaller growers.

2. Rotary wheels are majorly used by growers who grow 50 ha or less of bananas. Beyond 50 ha growers are more likely to use a water and belt conveyor. Larger growers cannot typically use a rotary wheel due to the size of the shed that would be required to house the wheel making it impractical to implement.

3. Larger growers believe water and belt conveyors achieve higher packing rates.

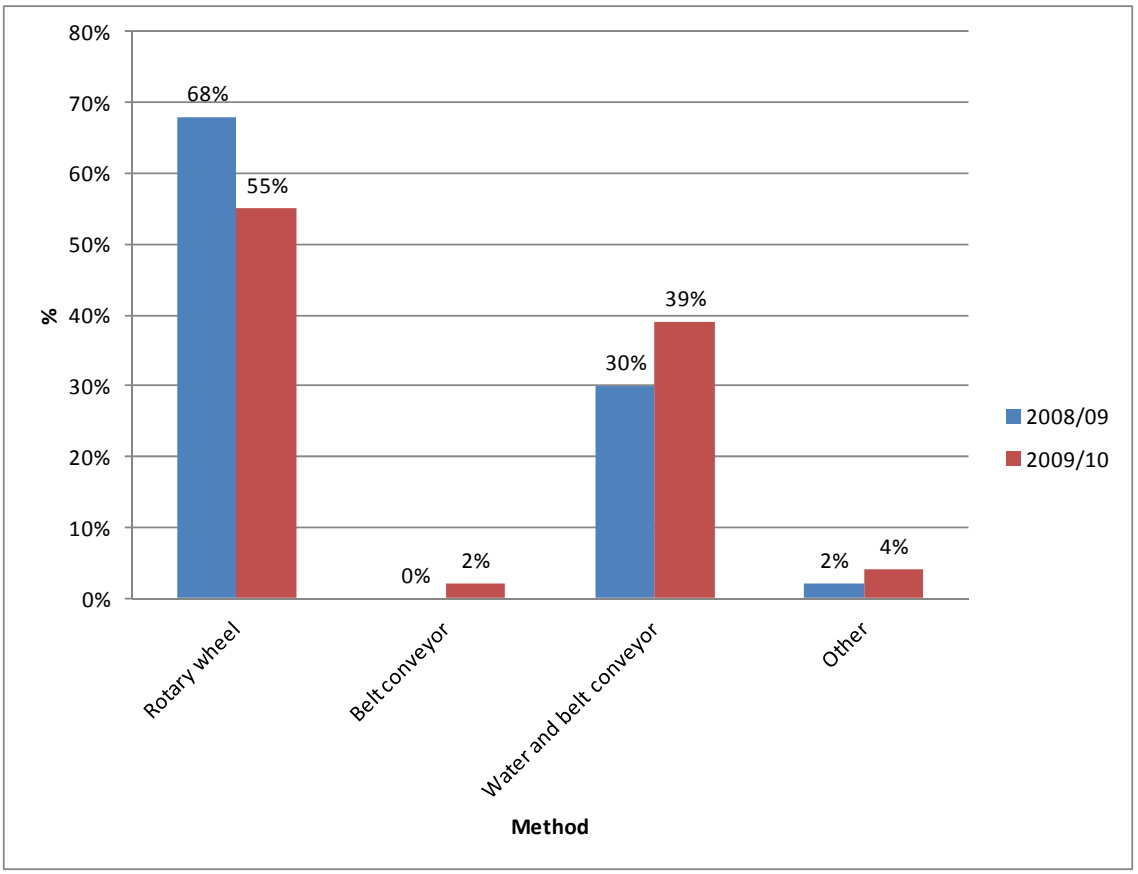
4. Rotary wheels are suited to having a variable number of staff operating them which suits smaller businesses where staff members may also be doing field work, harvesting and packing. By comparison, water and belt conveyors require a relatively fixed number of staff to operate.

5. Rotary wheel converts consider fruit is less damaged.

6. Growers are unable to pack hands effectively in a water and belt conveyor.

Figure 35 shows a comparison between the relative proportions of each type of packing system in use in 2008/09 and 2009/10. The higher percentages using water and belt systems and correspondingly lower percentages for rotary wheels is believed to be due to the larger average size of growers who participated in 2009/10.

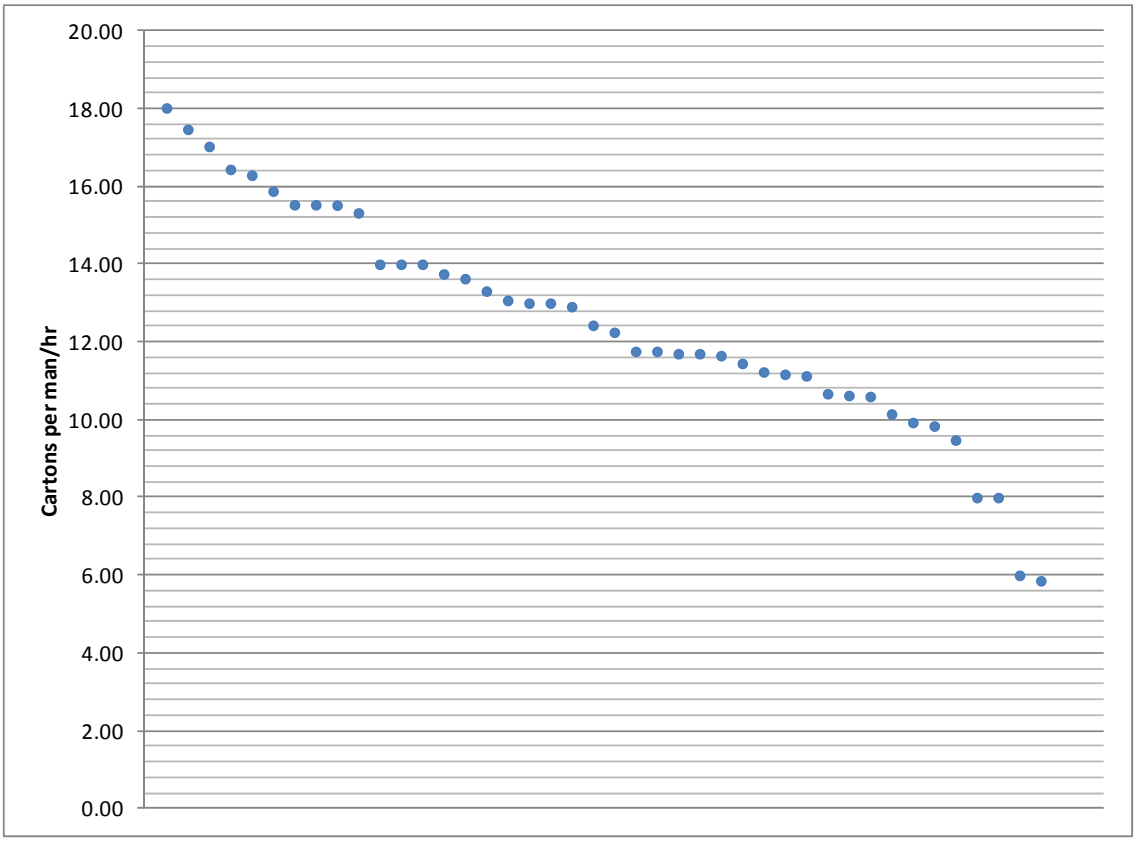
Figure 35: Comparison of Packing Equipment Systems in Use – 2008/09 and 2009/10



Packing Rates

Figure 36 shows the variation in average packing rates calculated with growers in 2009/10. The variations in packing rates are as high as just over 18 cartons per hour to as low as 5.5 cartons per hour. Packing rates would be expected to vary depending on whether or not the grower is packing Lady Fingers which require more delicate handling and are frequently stickered or if fruit is being value added in other ways (eg. Placed into prepacks).

Figure 36: Packing rates in Cartons Per Man Hour for Various Growers – 2009/10



The rate at which a grower packs fruit will have a significant impact on total labour costs. For instance, a grower who packs at 12 cartons per man hour with an average wages costs for employees of $22 per hour (including superannuation and other on costs), the cost per carton will be $1.83 per hour which represents 11.3% of the average of on farm costs of production or 27.9% of labour costs. By increasing the average packing rate per hour from 12 to 15 cartons per hour, cost savings of $0.36 per carton will be achieved.

For an average Queensland Cavendish grower producing 144,193 cartons per year this represents a cost saving of $52,390 per year, which is significant.

CDIPM's observations of packing systems in use by the majority of growers suggested that there was significant potential cost savings with improvements in shed flow designs and human resource management systems. Certainly based on the above simple cost savings scenarios a number of growers would benefit from improved systems.

Certainly the top 5 packing sheds in terms of packing rates per hour observed by CDIPM had significant lessons that could be used by other growers. Some of the information on these 'better practice' systems was not able to be included in the qualitative sections of this report due to growers requests for confidentiality. These growers have indicated they may be prepared to provide information to other growers if requested. CDIPM also has the knowledge of these systems.

Table 34 shows the packing rates per man hour for the Top 10 growers in 2009/10. It is not possible to determine if there is a correlation between packing rates and profitability due to factors such as those provided in the "Comments" section of the table.

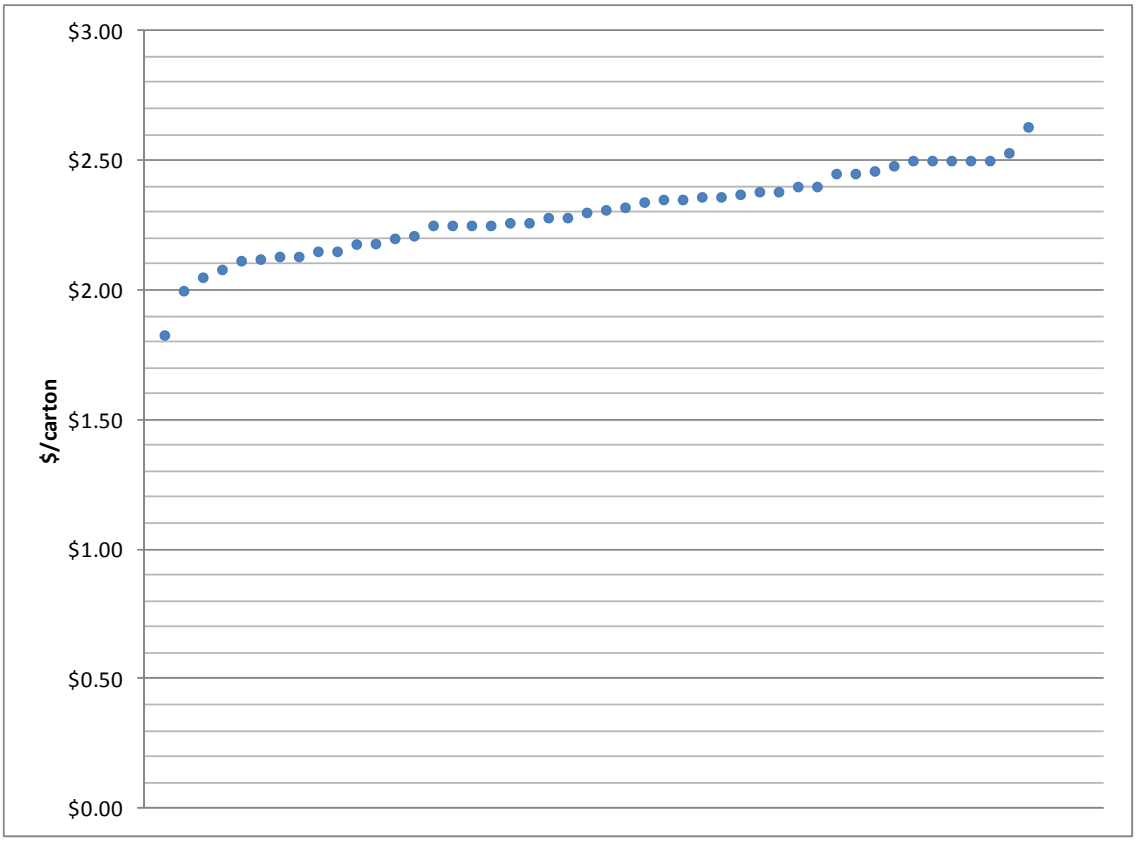
Table 34: Packing Rates of the Top 10 Growers – 2009/10

Position	Grower ID Number	Packing rate (cartons per man hour) – 2009/10	Comment
1	17	15.88	
2	75	15.53	
3	28	11.17	Value add component to fruit packing so rates comparatively low
4	50	11.76	In-efficient fruit movement system would lower packing rates
5	85	5.86	Lady finger grower stickering fruit. Very inefficient fruit movement systems
6	31	17.03	
7	92	N/a	Significant value add component to fruit packing and so calculations of packing rate figures meaningless
8	43	N/a	Grower has fruit contract packed and so not aware of packing rates
9	67	12.43	Grower packs hands which lowers packing rate
10	70	13.31	

Carton Costs

Figure 37 shows the distribution of prices paid by growers ex GST for the primary or principal carton type that they used in 2009/10. Readers should be aware that these prices will be for either 6 or 8 per layer cartons, with and without lids.

Figure 37: Comparison of Carton Prices Paid ex GST (principal carton type) in 2009/10



There are a number of growers who were not able to respond to this question because either they had their fruit contract packed or using packing systems other than standard cartons.

The level of correlation between business size and carton cost is low with a value of -0.098 (that is, as carton volumes go up, carton prices would be expected to go down).

The level of weakness of the correlation between carton price and grower size is surprising to CDIPM. The low level of correlation does confirm that there are growers in the sample who have a large size but may not be benefitting from their economies of size and conversely some growers despite being small being able to negotiate relatively low carton prices.

Transportation

Freight rates paid by growers in 2009/10 based on the information provided do vary significantly from grower to grower. Due to the fact that there are multiple destinations supplied by growers and some apparently confusion with quoting prices inclusive or exclusive of the fuel levy it is difficult to provide a definitive response regarding the correlation between business size and freight rates paid.

Certainly freight rates for rail freight are less than road freight, although some growers consider potential losses in integrity in the cool chain and anecdotally higher levels of damage to bananas as reasons why some growers are prepared to 'absorb' the higher costs associated with road freight.

If further benchmarking work is undertaken, a more detailed examination of freight rates x method should be undertaken. Further, there may be industry benefit of developing a greater understanding of the economic value of loss (if any) of using different transportation methods. That is, if this work has not been conducted previously.

Human Resource Management

In 2009/10, the human resource management skills of each grower were assessed, across a broad range of parameters. Each grower received a human resource management skills rating of between 1 and 10 (with zero if the grower did not employ labour). The reader should be aware that the marketing skills rating assessment was not based on an objective assessment method, but rather the subjective assessment of CDIPM based on the feedback received during the interview process to a series of questions.

Each grower has received their individual rankings based on a series of responses received by CDIPM relating to their human management resources and skills. They have also received a copy of the graphs that will be presented below. Further discussion on each of these KPI's is also presented in the qualitative reports that the growers has received.

Figure 38 shows that 70% of growers have a limited reliance on the use of contracting labour, preferring to undertake the majority of tasks 'in-house'. These growers may use contractors for aerial spraying typically. They may or may not use contract labour for the harvesting of bits if they use that method of plant propagation. Growers in NSW typically don't use contractors as they are not available and so it is only in Queensland (predominately) where contractors are in use.

Nine out of Top 10 growers had a low or moderately low reliance on contract labour to perform field tasks. The one grower who had a higher rating had a unique operational model where the grower still had a very high level of daily control of field activities.

Figure 38: Degree of reliance on the use of Contract Labour, 2009-10

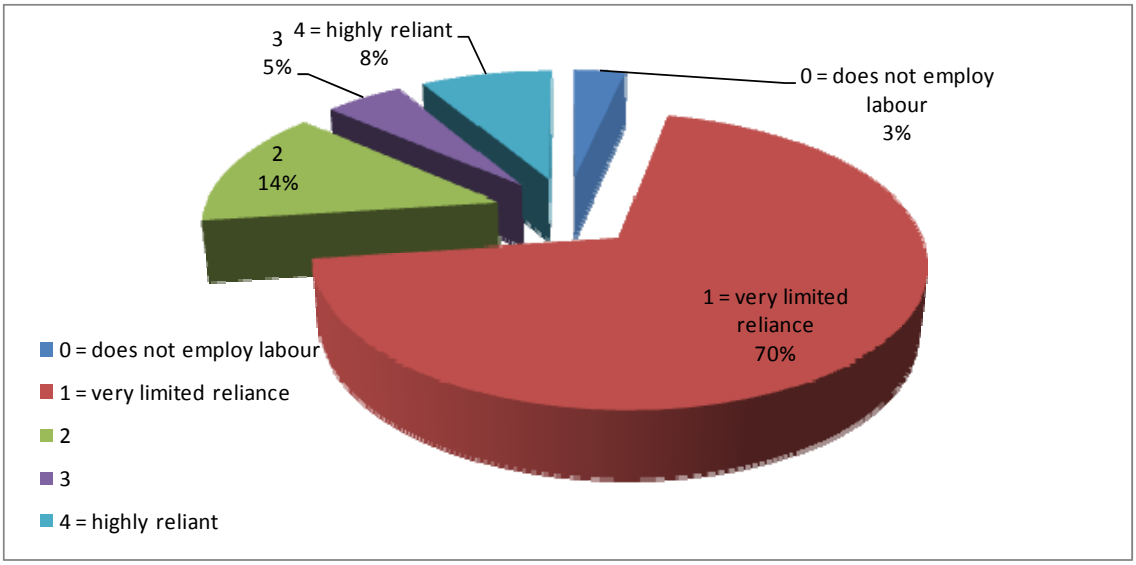
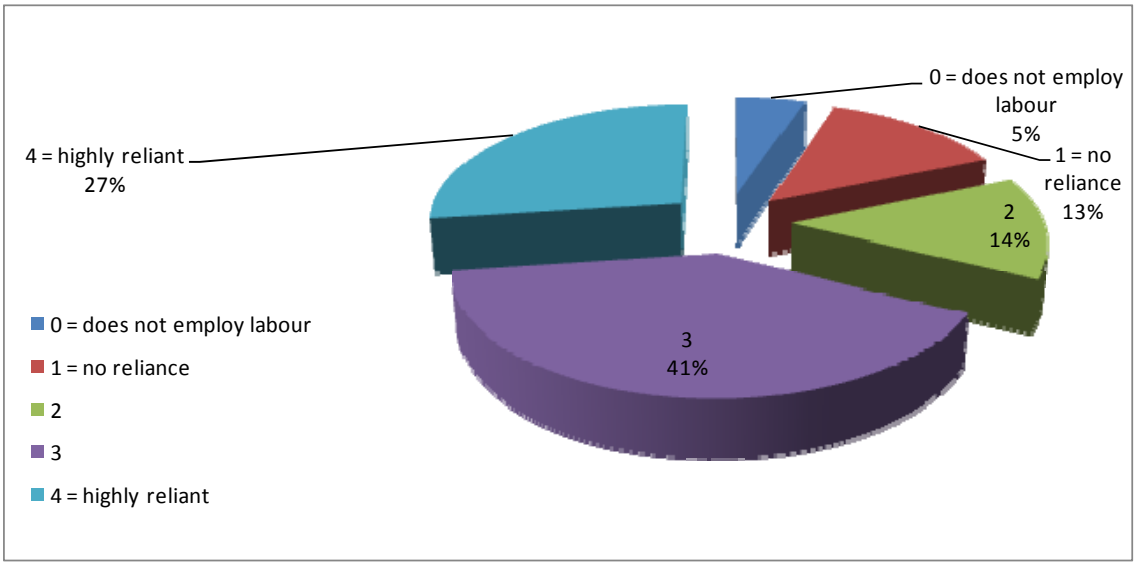


Figure 39 demonstrates the degree of reliance by growers on permanent workers in the operation of their business. Growers were asked to identify the number of workers who had more than 12 months of service and this was compared with the estimated number of workers employed on an average day. 68% of growers were either highly reliant or quite reliant on permanent workers. This rating can be used as an indicator of how successful a grower is in relation to his ability to retain staff.

Figure 39: Degree of Reliance on Permanent Workers, 2009/10



Ten out of 10 growers in the Top 10 had a high or very high dependence on permanent workers in the operation of their business. This figure is directly correlated with having a low level of staff turnover. Therefore the Top 10 businesses want to employ workers permanently and are able to keep them for long periods.

Figure 40 and Figure 41 shows the propensity of growers to quantifiably measure the performance of workers in the field and shed respectively. Both figures demonstrate that generally growers have a very low or low reliance on evaluating workers performance by some form of objective measure. Typically growers would respond with "I can if they are working" or "So long as they pack X pallets in a day I am satisfied". What these approaches suggest that the grower is not necessarily looking to improve the efficiency at which their workers perform at and so will not over time improve their labour use efficiency. Conversely, a number of growers have systems whereby there is daily and accurate measurement of worker performance. They typically engender a sense of 'competition' which the workers in these businesses appear to respond to. Whilst this 'approach' may not work in all environments, CDIPM is of the view that with more data collection systems in place that significant improvements may be able to be made resulting in lower labour costs.

Figure 40: Degree of Performance Measurement of Field Workers, 2009/10

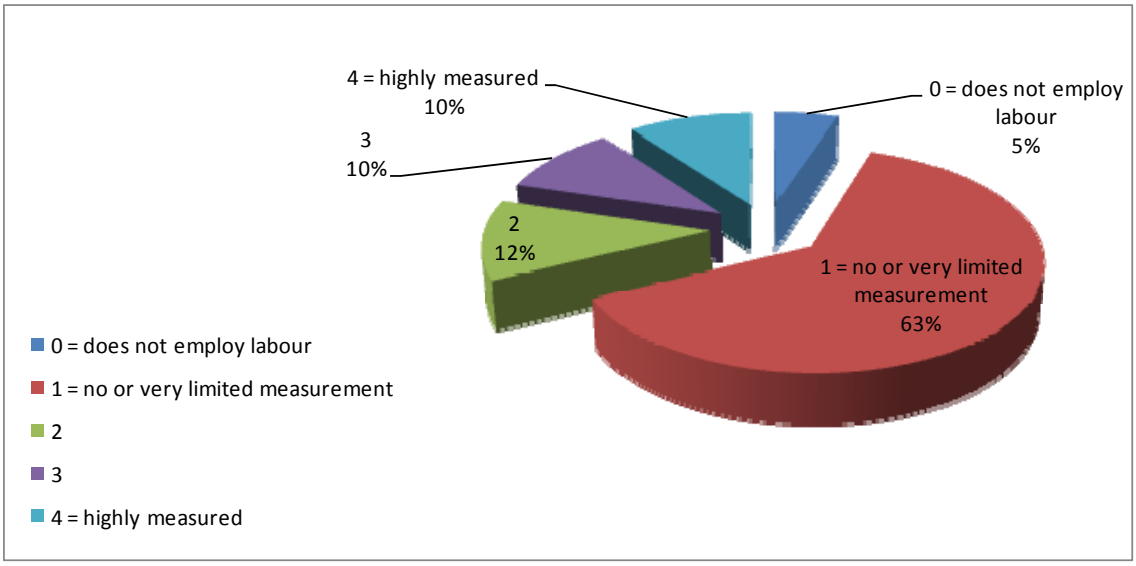
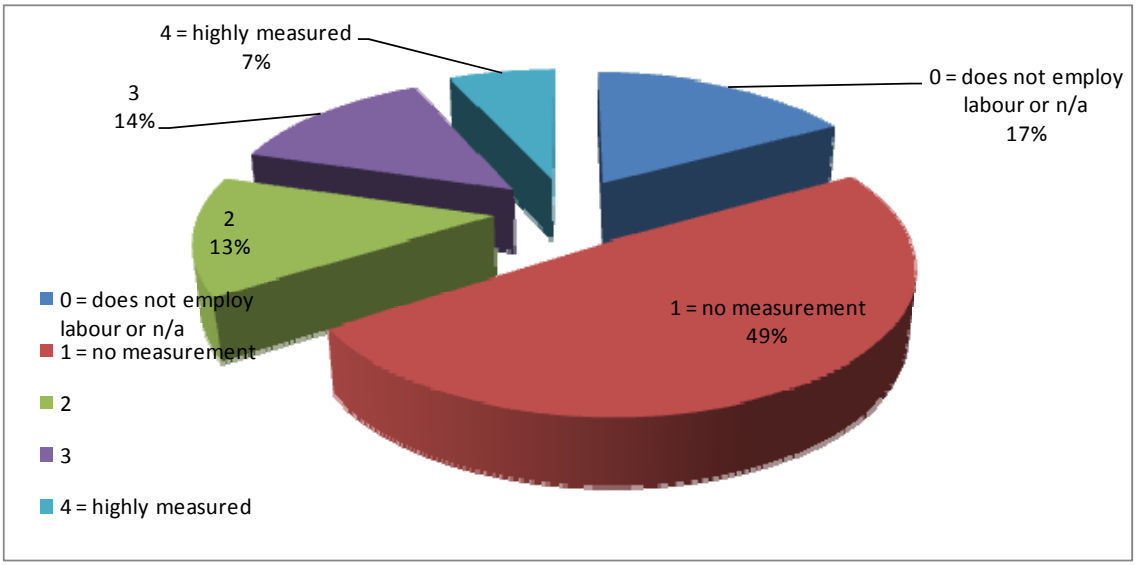


Figure 41: Degree of Performance Measurement of Shed Workers, 2009/10



In the 2008/09, CDIPM observed that the Top 10 growers appeared to provide workers with a more clearly defined approach to what is required of them on a daily, weekly or longer basis. Figure 42 shows that 66% of growers considered that they had a highly defined or well defined approach towards what is required to be completed each week / month in the operation of their farm. For instance growers who insist that each week that a defined set of activities be completed, often written down received a rating of 4. Growers who appeared unconcerned if key farming activities eg, bell injection, irrigation etc is completed in a timely fashion received a rating of 1. CDIPM's observations are that generally growers have a good focus on what needs to be completed each week but improvements are possible for nearly every business.

Figure 42: Level of Structuring of Farm and Packing Activities Each Week / Month- 2009/10.

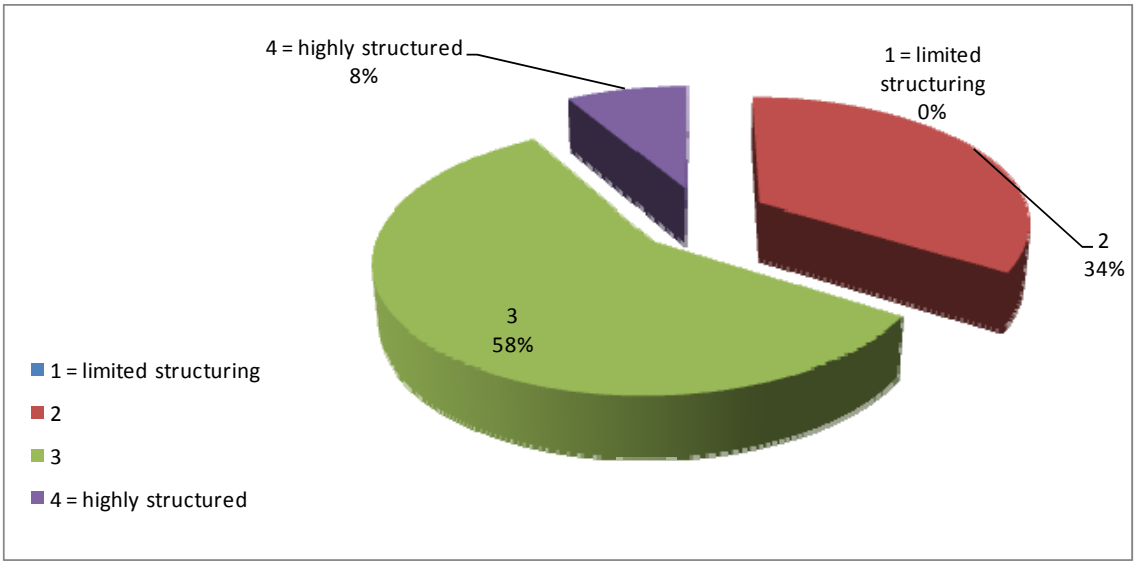


Figure 43 demonstrates the ratings applied to the strength or otherwise of a co-operative working relationship between growers / managers and staff. Overall, 53% of owners / managers had an apparently good working relationship with staff, with 30% having a relationship which could be improved considerably in one or many areas. These 30% of growers / managers may not have the respect of the manager and / or the relationship could be described as a "Do as I say approach".

With respect to the Top 10 all except one grower had a high or very high apparent level of co-operation when working with their employees. That is, it would appear they do not have an adversarial relationship with their team.

The level of correlation between owners / managers maintaining a co-operative work environment and maintaining a high level or need for permanent workers is equivalent to 0.54. This indicates a moderately high level of correlation.

Figure 43: Business owner / manager approach to a co-operative relationship with staff, 2009/10

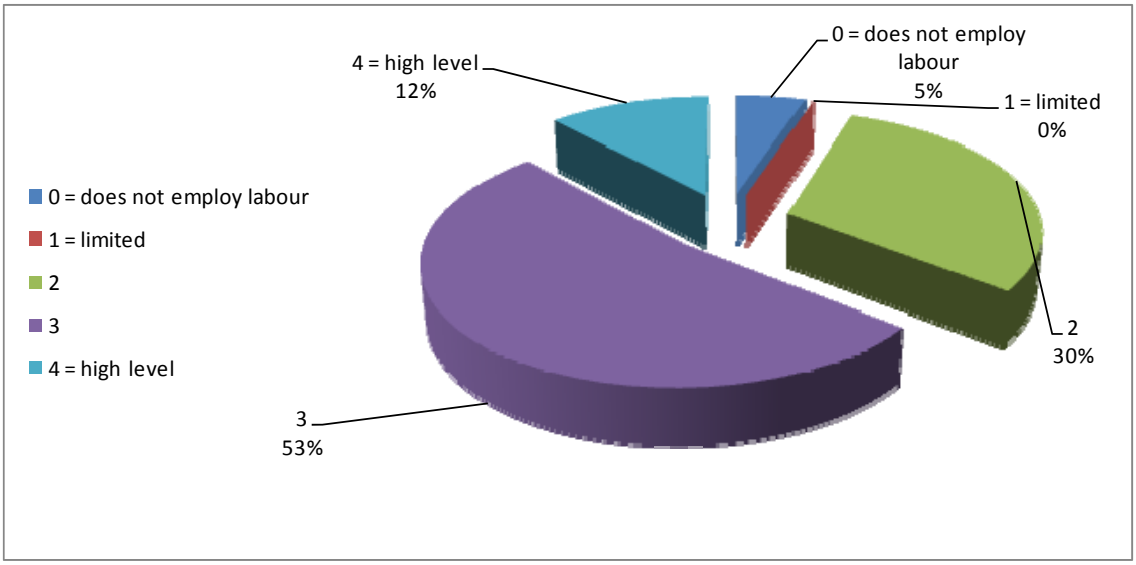
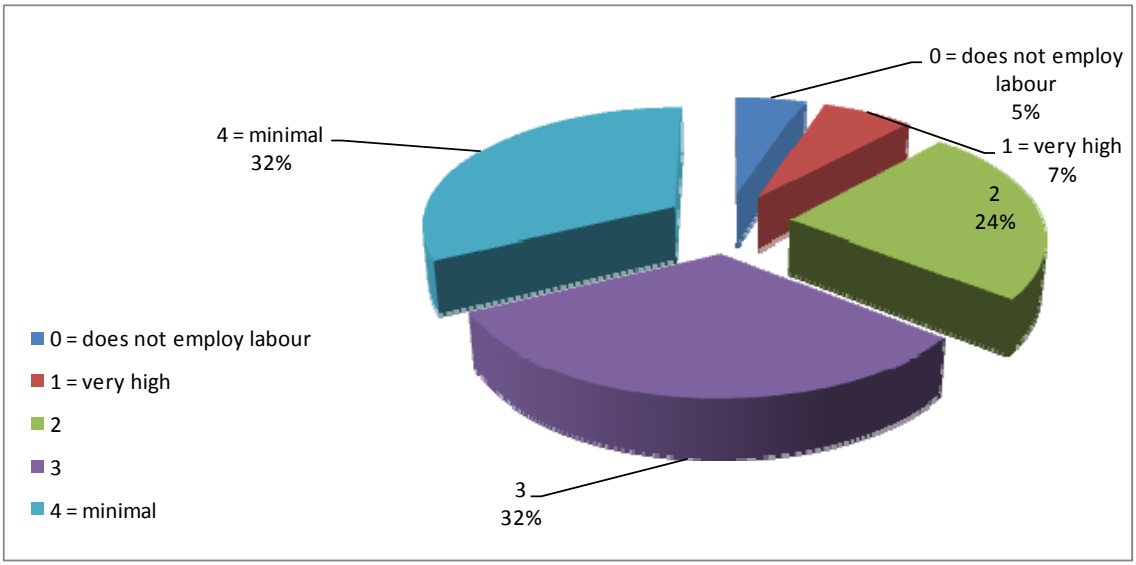


Figure 44 shows the ratings for the apparent level of staff turnover in each business. A ranking 4 indicates there is minimal staff turnover and a rating of 1 is very high which is seen as being less than optimal.

The level of correlation between staff turnover and the apparent level of co-operation between staff and owners / managers is moderately high at 0.55.

Figure 44: Apparent Level of Staff Turnover, 2009/10



In the 2008/09 report CDIPM hypothesised that the better performing businesses had in place systems that provided incentives and rewards for better staff performance. The analysis of data from the 09/10 study does not support this view. As shown in Figure 45 and Figure 46, only 15% and 14% respectively of growers have moderately high or high level of bonus / rewards systems in place for their workers. Some growers commented that they had in previous years used incentives to workers in order to get better performance. The majority of growers / managers suggested that they may give a Christmas bonus to selected workers or something similar that is ad hoc and that is left to the discretion of the employer.

Figure 45: Do you have a bonus / performance reward system in place for field staff, 2009/10?

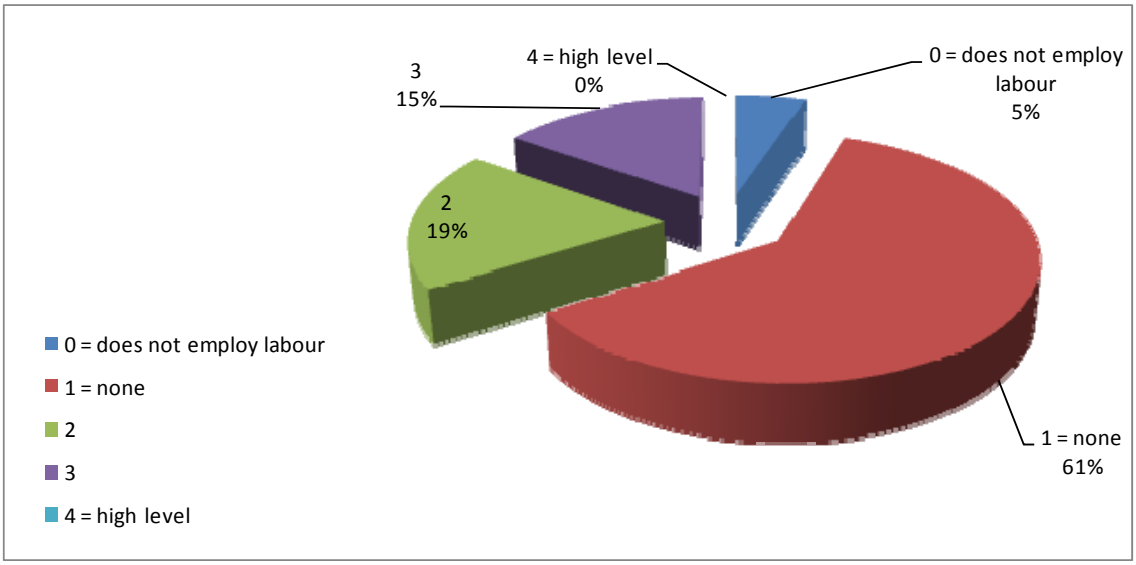
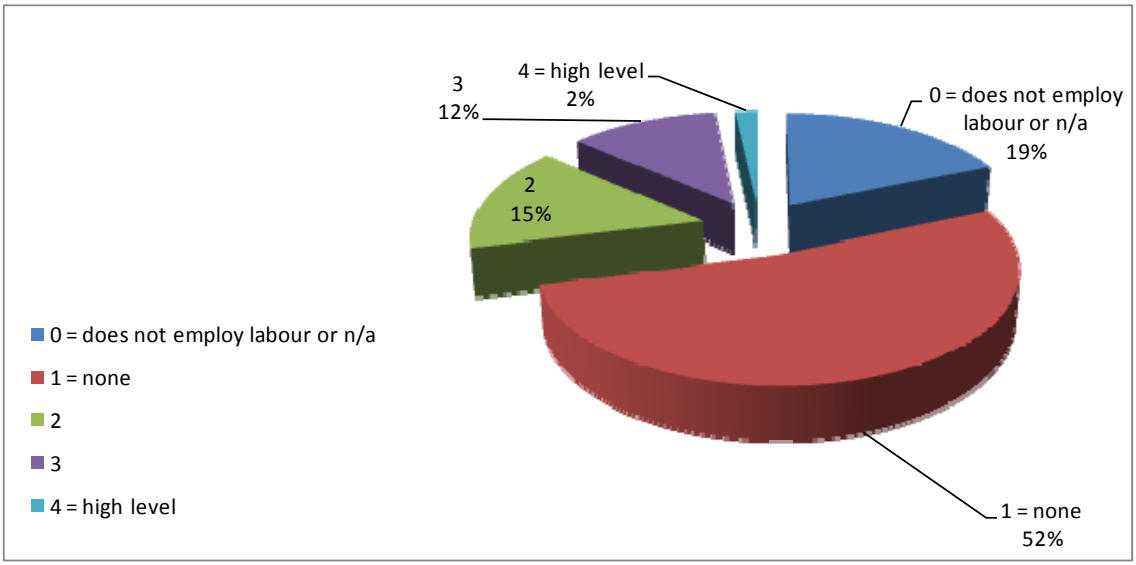


Figure 46: Do you have a bonus / performance reward system in place for packing staff, 2009/10?



Sources of Labour

The 57 growers for which labour statistics were gathered employed a total of in the study employed 108.59 FTE family members (1.91 FTE's / business) who were not paid wages and a further 903.9 non-family FTE workers, whether they be paid family members, permanent, permanent part time or casual workers. The employment figures do not take into consideration the number of FTE's of work performed on these farms by contractors.

A FTE is defined as a person who works for 1,920 hours per year (48 weeks x 40 hours / week).

Of the 559.5 FTE's employed, the estimated 'nationality' or origin of these workers for 2008/09 and 2009/10 is presented in Table 35.

Table 35: Source / Nationality of Labour employed by Banana Farmers in 2008/09 and 2009/10

Source of Labour / Nationality	% of Total 2008/09	% of Total 2009/10	Difference (%)Comment
Australian	65.4	51.8	-13.6
Backpackers	15.6	30.5	+14.9
Asian / Indian	15.9	15.0	-0.9
Pacific Islander / PNG	0.1	0.7	+0.6
Other employees / Don't know	3.0	2.0	-1.0

In 2008/09 growers commented that they were moving away from Australian workers to either Backpackers or people of Indian or Asian nationality. The above table confirms that this movement is still continuing. Growers have generally become disillusioned with Australia workers because of their generally poor work ethic, with the 'good ones' working in other more lucrative professions such as mining or that industries support services

In the Innisfail region in particular, workers of Asian or Indian descent are increasingly making up a larger proportion of the workforce. Growers commented very favourably about their reliability and willingness to work.

Backpackers continue to play a core role in the operation of the banana industry. Their flexibility in terms of the hours of work provided to them (particularly associated with packing) and their work ethic (generally) make them attractive to banana growers to employ. The relatively recent changes to visa restrictions on length of service that backpackers can provide to workers, is seen as a major factor for the proportion of them employed in bananas.

Growers commented that sourcing people to work was generally not an issue. The issue is rather the lack of banana growing or packing skills workers necessitating considerable investment in training and re-training of workers.

Marketing Systems

Transaction Systems

There are 5 principal methods by which growers market bananas to the next transaction point. These are:

1. Weekly fixed price (5% of respondents)(same as 08/09): Principally, this is achieved by growers who deal directly with one of the major chain operators who fix a price, typically on a Thursday or Friday the week before delivery. The price paid is generally fixed however it may be adjusted depending on the movement of wholesale prices. Both organic growers also indicated that the prices for their product have little movement week to week.

2. Pooled returns (11% of respondents)(10% in 08/09): Growers who supply a central packhouse in all instances have their returns pooled across a size and grade on a weekly basis. Growers are generally advised of the performance of their pool 2 weeks after delivery of the product. In one instance, the central packhouse provides a very high level of transparency (and other services) to their growers, even indicating to who the product is sold. This packhouse is grower owned but in the majority of other cases the packhouse is owned by a third party, most often a wholesaler or affiliated company.

3. Merchant transaction (42% of respondents)(45% in 08/09): 45% of growers indicated that they considered the basis of the transaction which they have with their customer is a merchant transaction. That is, they do not see the gross price that the bananas are sold for, but rather net price. However, further investigation indicated that the vast majority of these transactions are not completed according to the Horticultural Code of Conduct, where wholesalers trading as merchants are required to negotiate the purchase of bananas within 24 hours of arrival. In fact, the vast majority of growers are not even being informed of the price they will receive for their product until the final payment is received by growers.

4. Agency transaction or Hybrid Transaction (26% of respondents) (25% in 08/09): 25% of growers indicated that they considered the basis of the transaction which they have with their customer is an agency transaction. This is on the basis that the grower is advised a gross selling price less deductions for marketing commissions and charges. No grower, however, appears to be being informed or seeking to being informed of the identity of the purchaser. A large percentage of growers is not being advised of the gross price that they have received for their product, often not until the final payment is received by the grower.

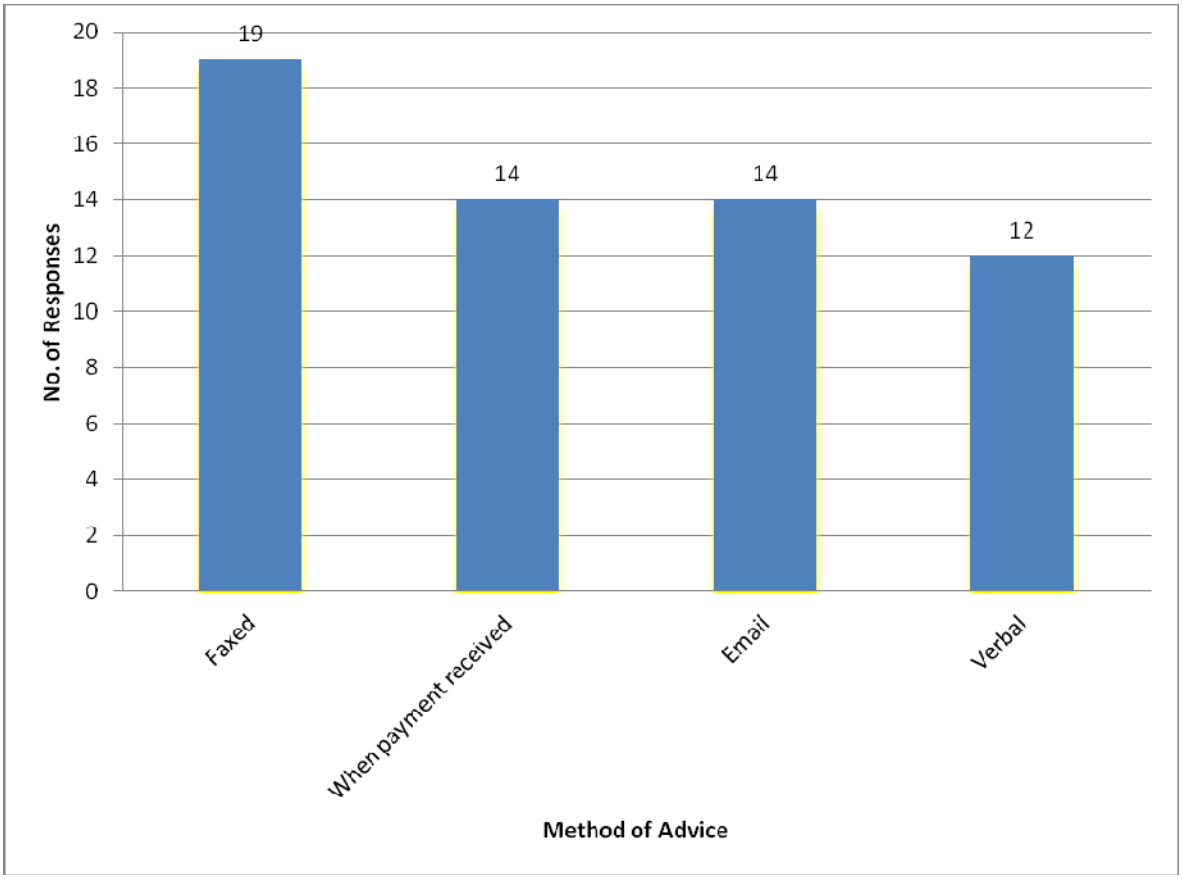
5. Brokerage (16% of respondents)(12% in 08/09): 12% of growers indicated that they have a brokerage arrangement for the marketing of their produce. In the majority of instances, the broker has a commercial relationship with one or both of the major chain retailers and smaller chain retailers. The broker attempts not to have to market fruit through the wholesaler system as this attracts another level of marketing charges. The level of transparency between brokers and growers appears relatively strong.

As indicated by the year on year comparison figures there has been little change in the proportions that each method is used.

Communication

Figure 47 shows that 14 growers only know the price that they are going to receive when they get paid. This combined with the 12 growers who only receive price advices verbally suggest the high degree of vulnerability that some growers face in terms of price discovery. CDIPM's observation was that many growers were 'happy' to adopt this approach mainly because that this is the way that they have done business over many years. Whilst 33 growers receive either email or fax communication of pricing the question was not asked how long it takes to get this advice from their customers. Based on discussions in relation to the Horticultural Code it would appear that these confirmations are received well after the date that the fruit should have been sold.

Figure 47: Communication Method by which Growers Receive Price Advices for Fruit Sold from their Principal Marketer, 2009/10

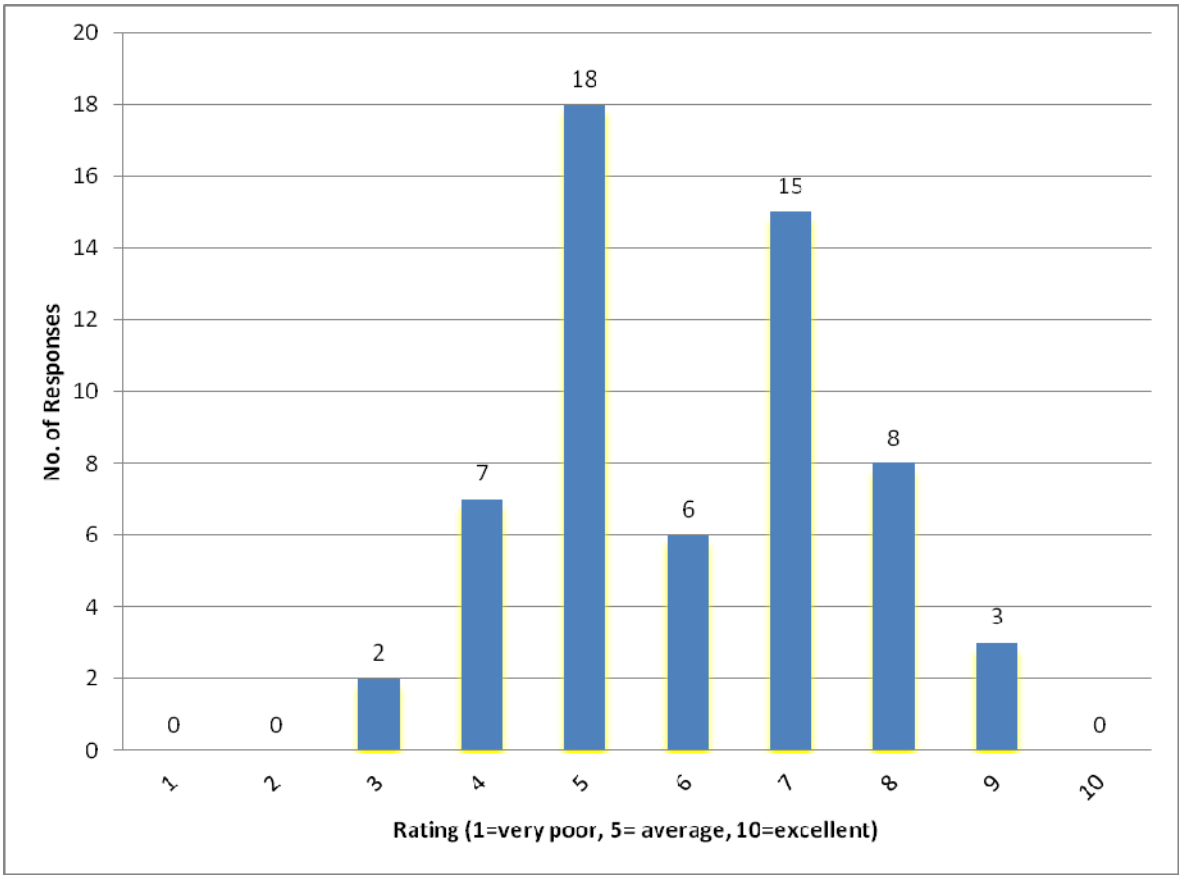


Marketing Skills Ratings

In 2009/10, the marketing skills of each grower were assessed, across a broad range of parameters. Each grower received an marketing skills rating of between 1 and 10 (with 1 being very low and 10 being excellent or highly skilled). The reader should be aware that the marketing skills rating assessment was not based on an objective assessment method, but rather the subjective assessment of CDIPM based on the feedback received during the interview process to a series of questions relating to communication with customers, method of price 'negotiation', transparency (or otherwise) of transaction, cross referencing of pricing information, confirmation method of pricing advice and the level to which growers seek or are informed about the banana market.

The number and distribution of each grower's marketing skills rating is provided below in Figure 48.

Figure 48: Overall marketing skills rating 2009/10



The average rate for the Top 10 growers was 6.60 and the average of the remaining growers the value was 6.22. This suggests limited variation in the overall skills of growers inside or outside the Top 10 group which is not that surprising given that in 2009/10 there was only a $0.37 per carton difference in price between the Top 10 and All growers (although this does represent a difference of 1.8%)

However, there are 3 growers who received a 9 rating and 11 who received an 8 rating which indicates that there are growers who in the opinion of CDIPM have superior marketing skills. Some of the observed characteristics of the growers with superior marketing skills are:

1. A high percentage of the product is sold based on a transparent pricing mechanism, often known prior to shipment (even though it is acknowledged some price adjustments may occur after shipment).

2. Growers may plan production volumes to meet the pre-agreed indicative (up to 12 months in advance) requirements of their customers.

3. The grower has a direct and mutually beneficial relationship with their primary customers.

4. Payment advices are confirmed by fax or email close to or at the date of sale and in respect of chain stores in advance of consignment in some instances.

5. Growers and customers work together to identify ways in which they can mutually achieve increased sales and improve fruit quality outturn.

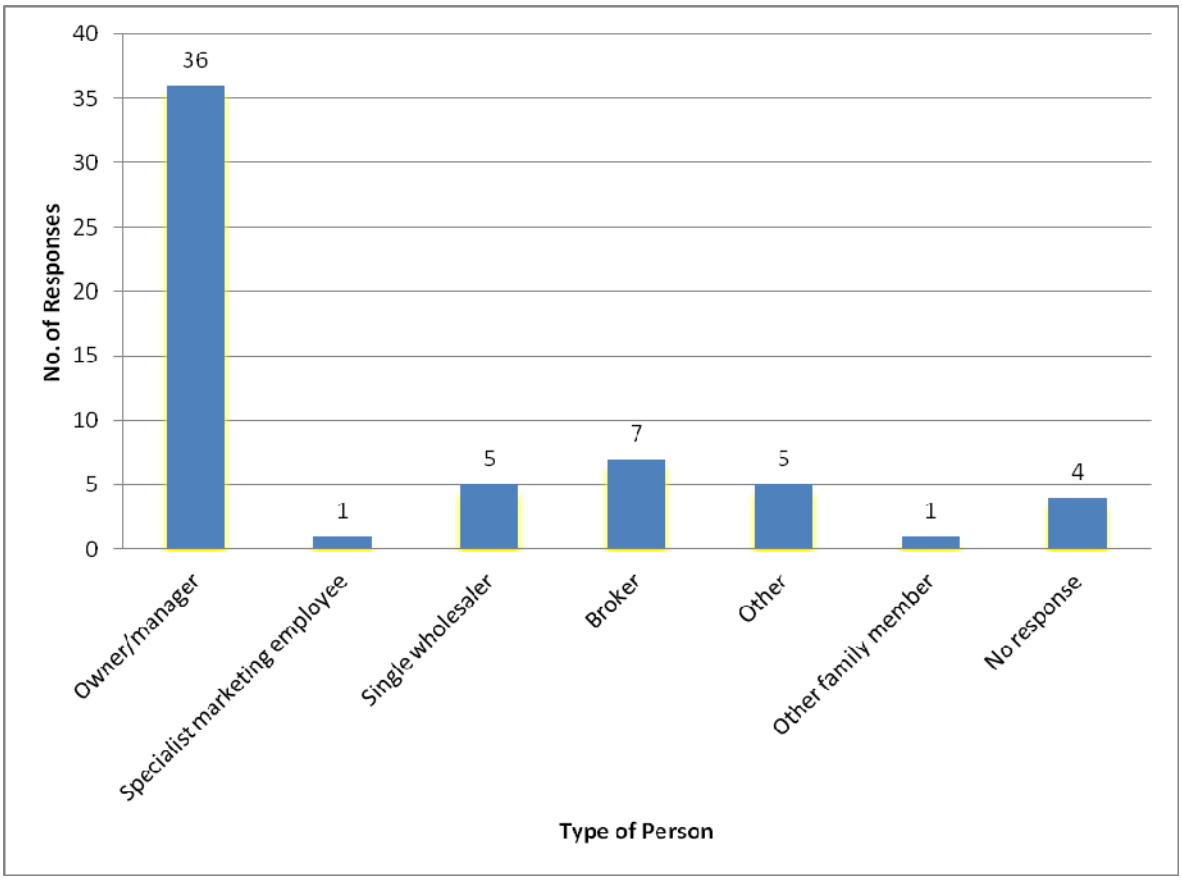
6. A low percentage of sales go through the traditional 'floor' marketing system.

There are 27 growers (nearly 50%) who received an overall rating of 5 or below. This statistic should be of major concern to these growers and industry in general because these growers may in fact be impinging on the price received by others due to their poor marketing skills.

Persons Undertaking the Marketing Role

Figure 49 shows that the majority (36 out of 59) of growers market their fruit themselves. This is not surprising as this is a traditional role that most horticultural growers have undertaken. However, the majority of these growers have no or very limited training in marketing and so are at a disadvantage when dealing with marketers who have many, many years in most instances of marketing produce. Growers also effectively 'advocated' the role of marketing to a third party in 12 instances. Five growers sold their fruit through a single wholesaler and so the grower does not have a decision to make on who is to receive their fruit. Also there were 7 instances of where growers 'marketed' all of their fruit via brokers, against effectively handing over the decision making to a third party.

Figure 49: Principal Person Undertaking the Marketing Role, 2009/10



Horticultural Code of Conduct

Figure 50 and Figure 51 demonstrates the lack of success that the Horticultural Code of Conduct has had in providing a concrete foundation with respect to the ways that growers and their customers do business. Only 39% of growers indicated that they have a signed Code of Conduct with all of their customers and 18% suggested they did with some. However, only 12% believed that their customers were adhering to the Code of Conduct agreement all of the time and a further 14% sometimes. Our anecdotal evidence suggests that it is mostly brokers who comply with the code most frequently.

Growers largely see the Code of Conduct as having no 'teeth' and just another piece of paperwork that they have to administer. CDIPM's general observations tend to agree with this view however growers must also accept some of the blame for not insisting that the Code of Conduct is adhered.

Figure 50: Do growers have a signed Horticultural Code of Conduct signed with customers? 2009/10

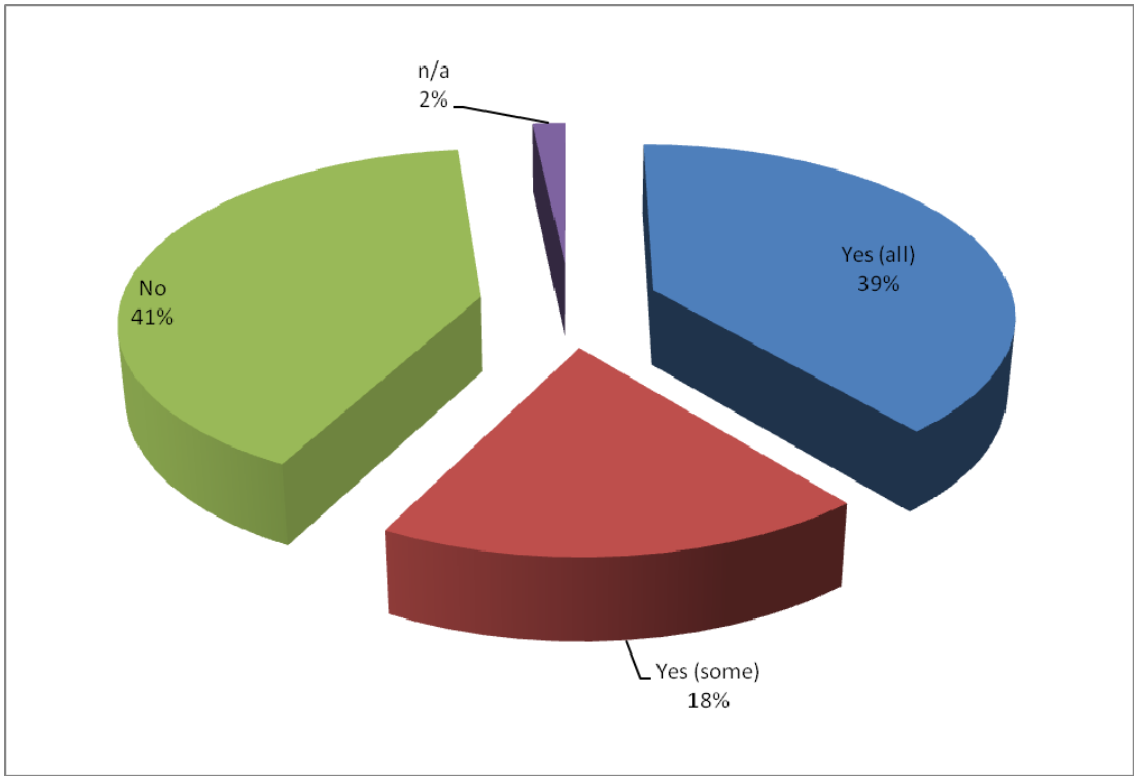
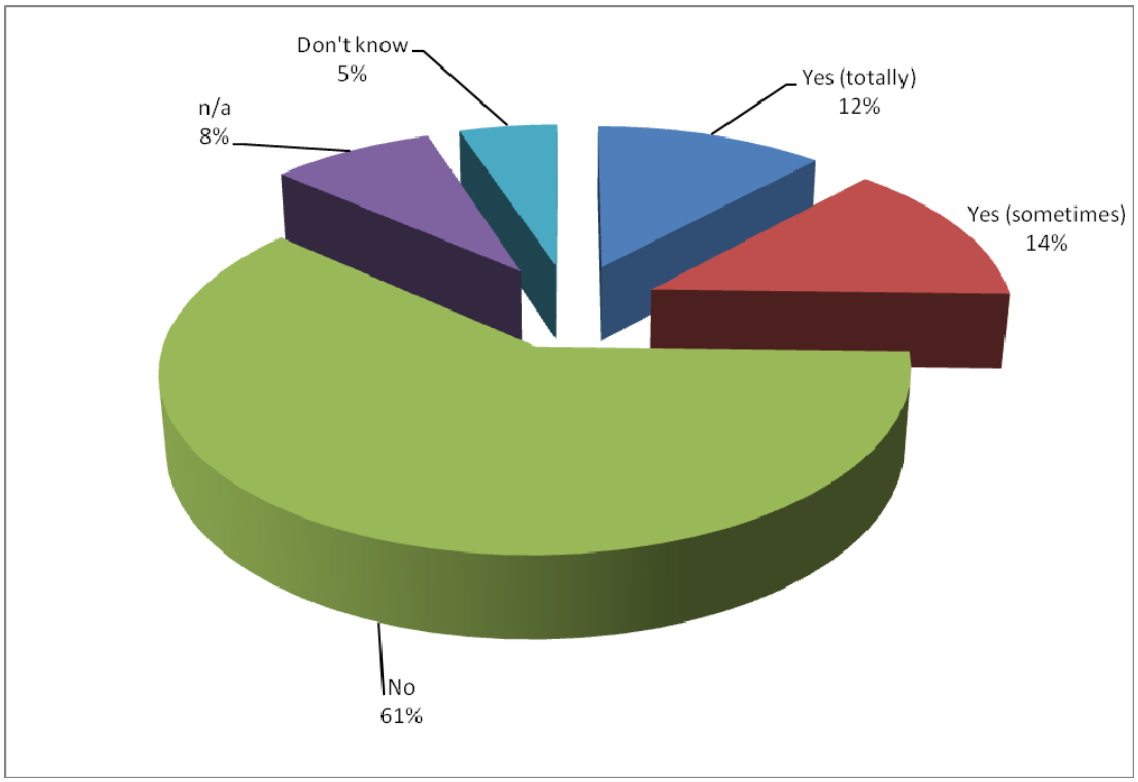


Figure 51: In the opinion of growers are the terms of the Horticultural Code of Conduct being complied with? 2009/10



Marketing Channels

Table 36 provides details on where which channels that growers market their fruit in both 2008/09 and 2009/10. The percentage figures represent the volumes of fruit delivered to each channel.

Table 36: % Bananas Sold Through Each Marketing Channel – 2008/09 and 2009/10

KPI Question	2008/09 (%)	2009/10 (%)
% Sold to metropolitan wholesalers (agent or merchant)	65.4	54.5
% Sold via a broker	25.4	38.7
% Customer not known or unavailable	5.6	3.2
% Sold direct to major chain retailers	2.6	2.7
% Sold to regional wholesalers	0.6	0.8
% Sold direct to the public	0.3	0.1
% Other	0.1	0.0

There has been a decrease of 10.9% in the volume of fruit sold via metropolitan wholesalers and a corresponding increase of 13.3% sold via brokers. This is reflective of the general view by growers that they receive a higher level of transparency from brokers. Further, at least 2 of the major brokers have significant relationships with chain store retailers. CDIPM's discussions indicated that the majority of growers who have access to the 'chainstore market' are quite happy to be a part of that channel.

The low level (2.7%) of sales direct to chainstores is somewhat surprising based on anecdotal evidence. CDIPM's expectations would be that the percentage would be higher than this.

Banana growers engage in limited value adding or selling of product direct to the public. This occurs is with smaller growers in NSW or through the operation of road side stalls in either NSW or Queensland.

Summary

In 2008/09, CDIPM wrote in respect of growers marketing bananas the following.

Our general observations with respect to growers marketing of bananas are:

1. *The vast majority of banana wholesalers are operating outside of the Horticultural Code of Conduct, with respect to price notification, negotiation and transparency (the exception to this are brokers).*

2. *Wholesalers are being permitted to be in breach, by banana growers who generally have limited proactive input into banana marketing and demanding greater adherence to the Horticultural Code of Conduct.*

3. *Growers have 'adopted' this approach based on long held traditions about how bananas are marketed which are not appropriate in today's business environment.*

4. *An observation of the average net returns received by growers indicates a very high degree of variability in prices received.*

Based on the analysis of the data from 2009/10 season there is nothing to suggest that these statements don't remain valid. In general, banana growers are a part of a marketing system that has limited transparency, with the exception of brokers and/or where sales are made through chain store retailers. Growers have remained in this system largely based on the tradition and the fact that they do not know other alternative marketing systems exist. Further, many growers based on the qualitative review of the responses to questions on marketing sales strategy do not help themselves by having a ad hoc (or no) approach to cross referencing or ensuring that prices advised of by growers are what is paid.

Discussion

The 59 banana growers who contributed to this study demonstrated widely varying levels of productive and financial performance. The growers in this report represent 30.8% of the ABGC estimated area of banana production in Australia (in 09/10) and so providers CDIPM considers an excellent 'snapshot' of Australian banana growers. Industry should be confident that the data presented in this reports provides an accurate representation of the financial and productive performance of the industry growers.

The principal measure used as an indicator of the level of success (or otherwise) net profit per planted hectare varied from -$34,604 to +$23,740. And whilst the bottom 5 growers can be considered outliers due to reasons such being new to the industry and so production not yet keeping pace with expenditure, extremely poor business management and loss of crops, the fact remains that there are banana growers are significantly more successful than others.

The Top 10 growers had an average net profit margin of 22.8% (up to 31.9%) which is very acceptable by any agricultural industry standards. The average margin of 7.3% for all growers would not be acceptable to the majority of business investors and some financial institutions.

Of the Top 10 growers in 2009/10, 4 of them were included in the Top 10 in 2008/09. Two growers included in the Top 10 in 2008/09 were not project contributors in 2009/10 and there were 3 new growers who were only participants for the 2009/10 season. CDIPM believes that based on this evidence that there are growers who will consistently show superior productive and financial performance compared to other growers.

Financial success does not appear to be dependent on location, soil type or variety produced, with growers in the Top 10 from all production regions except NSW (central or northern). There was a representative in the Top 10 from each of the Lady Finger, Sub-Tropical and Tropical (8) categories

Scale of operations do have an impact with growers who produce less than 50k cartons less likely to be included in the Top 10, principally due to the fact that the return to growers through wages provision represent a significant percentage of the total costs (and returns) of the business. Conversely, in 2009/10 there were no growers in the Top 10 who produced more than 180k cartons for the year.

Why the Top 10 growers are in the Top 10 is due to a number of factors and there certainly is no one set 'model' or 'formula' for other growers to follow. The section entitled "Analysis of Top 10 Growers" however provides a useful blueprint to others on the key focus areas that a non-Top 10 grower should be examining.

Each participant grower has received an extensive list of qualitative reports for the 58 other growers which details the actions and practices that each grower undertakes with respect to a range of questions right from site preparation, to harvest, to packing, marketing, human resource management and data collection skills. If they refer and then action one or many of the improved practices that they identify in these qualitative reports they should benefit in either productivity and / or financial terms.

This study has identified that the net profit per carton increased by $0.06 per carton, despite the fact that the cost base increased by $1.26 in a single year. Growers have commented that the average sales figures for the 2010/11 financial year up to Cyclone Yasi were well below the average of 2009/10. We would expect however that the cost of production of bananas would not have decreased particularly given the wages increase in 2010/11 and so overall banana growers are increasingly facing a margin squeeze, which on the basis of the analysis here will not bode well for many growers when banana production cycles return to normal.

The Australian banana industry now has a robust tool that with ongoing involvement of growers will serve the industry well when evaluating the financial and productive success of projects invested in by growers and government.

Also 39 growers who have contributed data for 2 years they too will be able to at a micro level examine the financial and productive impacts of decisions or adjustments made in their own business. Further, they will be able to evaluate whether or not they are keep ‘pace’ with their counterparts in respect of a broad range of key performance indicators.

Technology Transfer

Communication to Contributing Growers

Each of the 59 growers who supplied a full data file to the study has been provided with:

1. An electronic 'data file' of the information that they provided to CDIPM. This information was provided for 2 reasons. Firstly, to provide a historical record for the grower of the information they provided and secondly, to allow them to advise of any amendments required to their information. This electronic data file was provided prior to the grower reports being produced.

2. An electronic file including:

    a. Two Individual Comparative Financial Reports. The first financial report compares that grower's financial performance against all other growers included in Round II (56 other growers). The second financial report, in the same format, compares that grower's financial performance against those of a sub-group of growers which the grower belongs to. For this report, the 3 sub-groups are Queensland Cavendish growers, Sub-tropical growers (from NSW or WA) or Lady Finger growers

    b. Two Individual Comparative Non-Financial Reports. These reports are similar to 2(a) above except containing non-financial KPI comparisons.

    c. Two 'Industry' Financial Reports. These 2 reports show the average and ranges performance for a range of financial KPI's for either all 57 growers or the sub-group to which the grower who receives these reports belongs to.

    d. Two Year-on-Year Comparison Reports. For growers who had contributed data for 2 years a comparison report on those growers KPI's for each of those 2 years is provided. This allows the grower to compare how their business has performed on a 'like for like' basis for each of those 2 years.

    e. Two 'Industry' Non-Financial Reports. Similar to 2(c) above except these reports contain averages and ranges for non-financial KPI's.

    f. A qualitative benchmarking report showing the responses to a broad range of production, packing, marketing and human resource management questions from all 59 growers.

    g. An extensive series of graphs for specifically selected financial and non-financial KPI's depicting the results of all growers included in the study (57 growers for non-financial and 59 growers for financial KPI's.

3. A written explanation from CDIPM relating to the electronic information presented to them from (2) above.

4. An invitation to contact CDIPM at the conclusion of this study to discuss their own individual results.

Communication to Non-Contributing Growers / Rest of Industry

Grower Communication Strategy

The anticipated external communication program involved a series of shed meetings, regional grower associations meetings and one teleconference. This communication method was seen as the cornerstone strategy to communication the results and observations of the project findings, due to the

complexity and volume to be presented making other non-'tactile' methods less likely of success. The dates and locations of the meetings held and the number of growers who attended each meeting are summarized in Table 37.

Table 37: Details of Grower Presentations held for Communication of Project Findings

Who	Date	Location	Delivery Method	No. of Growers Who Attended
Carnarvon growers	6.30pm, Tuesday 7th Feb, 2012	Brisbane	Teleconference	8
Kennedy Valley growers	3.30pm Thursday 9th Feb, 2012	Kennedy	Shed meeting	5
Cassowary Coast (Tully / Innifail) Grower Association	7.00pm Thursday 10th Feb, 2012	El Arish	Local grower association meeting	31
Atherton Tableland Growers	12.30pm Friday 10th Feb, 2012	Mareeba	Special local grower association meeting	7
Coffs Harbour Growers	6.45pm Wednesday 1st Feb, 2012	Coffs Harbour	Local grower assocation meeting	14
Northern NSW growers	5.45pm Wednesday 8th Feb, 2012	Murwillumbah	Local grower assocation meeting	9

Feedback / Communication from Meetings

Error! Reference source not found. provides a summary of the feedback / communication received from growers who attended each of the grower meetings held.

Growers who attended the meetings reacted positively to the content of the presentations. Each presentation fielded a wide variety of questions relating to understanding of the information presented and to provide input / comment to the observations made.

Core feedback received from the growers included:

1. Concerns regarding the increasing cost of production ($0.91 per carton on average amongst the 40 dual year growers), particularly in the face of potentially lower average prices which may be received by growers over the next 18 to 24 months.

2. A number of growers expressing surprise at how far in advance of the average the top 10 growers were, followed by a desire to identify those factors that allow these growers to be in this position.

3. Very positive feedback (and in some case surprise) at the factors that have contributed to why the Top 10 growers were in that position. A number of growers commented that they were very interested in understanding more about the HR management practices of the Top 10 growers since the labour component of the Top 10 were on average a $1.67 per carton cheaper.

4. Many growers in the vein "How we make the chains or 'big boys' aware of this information". Growers generally believed that major end user customers would be surprised at how much it costs to produce a carton of bananas. There was a general view that this cost of production

information should be made available in a planned fashion to major members of the banana supply chain.

5. The NSW industry in the face of a lack of cost of production competitiveness needs to implement ways to differentiate themselves from North Queensland producers. The general view is that the Sub-Tropical marketing program is the way forward but growers lack the motivation and operational models necessary to further develop the program.

6. Strong support for the benchmarking program to continue particularly given the fact that many growers in North Queensland have adopted new production practices following Cyclone Yasi. Further, the benchmarking program will also be able to assist in identifying the financial impact of Cyclone Yasi of participant growers which may be beneficial in future.

ABGC

CDIPM will provide a de-briefing of the final report to the CEO of the ABGC, and if required the ABGC Board, at a mutually convenient time.

An electronic copy of the industry reports has been provided to the ABGC's Communications Manager for subsequent inclusion on their website and in articles published in their 6 monthly periodical.

Similar information, specific to the NSW growers, was also provided to Mr. Neville Sloss, who is responsible for communications to the Sub-Tropical growers in NSW.

Non-Grower Supply Chain Members

As discussed in "Recommendations", CDIPM believes that a party, whether that is the ABGC or HAL or CDIPM via a separate engagement, should via a series of facilitated meetings present the key findings of this report to non-grower members of the supply chain. These parties should have a vested and significant 'stake' or involvement in the industry. These parties may include selected wholesalers and brokers, ripeners and major and major chain store operators (eg. Woolworths, Coles Meyer, IGA, Aldi).

The driver to this recommendation being to ensure that the key findings of the study are communicated in such a way so as to ensure there is a good level of understanding and the 'word-of-mouth' does not distort the true report findings.

If agreed to these meetings should be conducted within 2 months of the release of the Final Report, in the opinion of CDIPM.

Grower Associations

CDIPM will make available an electronic copy of the Final Report, once approved for release by HAL to each of the banana grower associations were grower associations meetings were held.

Recommendations

BA10026 and its earlier counterpart BA09037 has resulted in the development of a robust tool that can continue to be of benefits to the production sector as it strives towards maximizing revenue in the face of a rising cost profile.

During the course of completing this research assignment CDIPM has identified a number of activities that HAL and the ABGC that would be of benefit to industry if supported. These are considered below.

1. Ongoing Benchmarking Activities

The high return rate of growers from Round I to Round II indicates that growers do see a benefit in their participation of the project. It is not realistic however to expect that the whole of industry should continue to fully pay for the continuation of the project into Rounds III and beyond. CDIPM believes that there should be a 'User Pays" component to any future benchmarking activities. The share that growers and industry should provide needs to be subject of further discussions based around an anticipated project cost. The project cost will be influenced by whether or not new growers are included into the project or not. It is realistic to assume that some growers (NSW growers in particular) may opt out of the project if a charging model is introduced. CDIPM would recommend that between 5 and 10 new growers be brought into the project each year if possible in order to maintain the sample level at 30% or beyond of productive area.

If no new growers are brought into the program, it will not be necessary for the consultant to visit any of the growers in order to collect the data. Our experience in other projects, and with the returning growers from this project, is that phone interviews for the qualitative aspect of data collection to be adequate.

The next year to be evaluated is 2010/11, which as all will know will present major variations in productive and financial performance depending on the location of the grower and whether or not their crops were impacted by the cyclone or not.

CDIPM's discussions have highlighted that many growers altered their production practices following the cyclone since they had the time to do so. CDIPM would therefore recommend that a full benchmarking consultation be undertaken (production, financial and qualitative) in order to capture the information pertaining to these changed practices and also to identify the financial and productive impacts that Cyclone Yasi caused for growers. As alluded to above if no new growers are involved in Round III, the cost of undertaking Round III would be significantly less than Rounds I and II.

2. Adoption Strategies

Growers in Round I commented that the sheer volume of data presented to many of them was daunting and that they lacked the time in many instances to 'trawl' through the data to identify those top 4 or 5 activities that they should be focused on that will provide the greatest benefit to their industry.

Immediately after the release of the Round I report and soon after Cyclone Yasi hit North Queensland discussions were held between CDIPM and HAL and the ABGC with respect to developing a project whereby CDIPM would analyse a participants growers report and to assist them de-mystify the findings of their benchmarking report. This project was not proceeded we understand because of the perception of disproportionate benefit to selected growers.

Banana BM II has recently delivered to growers an even volume of information with some growers receiving year comparison data and all growers receiving financial and non-financial reports for not just all growers included in the study but also their own production group (Queensland Cavendish, Sub-Tropical Cavendish and Lady Finger growers). The benchmarking project runs the risk of losing support from growers unless a mechanism is found by which growers can be able to understand what the findings from the project mean to them and to identify key areas of future focus for them. These

growers should be used to as advocates where possible to 'proclaim loud and long' about the benefits of being involved in the benchmarking project.

To this end, CDIPM would recommend that 10-15 growers be given the opportunity via a 'communications style but one-on-one project' that would undertake the following:

- Consultant to review the financial, non-financial and qualitative reports for an individual grower to identify 4-8 areas of focus that an individual grower should be focusing on.
- Consultant to meet with the grower to sit down and allow them to understand the Round II project contents.
- Discuss with the grower those 4-8 areas of focus that the consultant believes would be of greatest benefit for the grower to address.
- Develop an action plan of activities to address these 4-8 areas of focus.
- Monitor / guide / assist the grower to implement these strategies over a 3-6 month period.

At the conclusion of the project, CDIPM would recommend that an independent agency be used to evaluate the success of the project in the eyes of the participants including being able to quantify any gains that have been achieved. Where possible, with the assistance of growers, develop a series of testimonials that can be used in the future 'marketing' of new benchmarking rounds.

The benefits of benchmarking come from comparing an individual grower's business performance across multiple years. Further, by having data from multiple growers over multiple years an improved picture of how the industry is moving towards international best practice can be made. This is one area where previous benchmarking programs have failed over the years. That is, the industry has failed to provide the resources necessary to enable the activity to continue over a number of years.

3. Detailed Analysis of Top Ten Growers

With the Top 10 growers or those who have consistently achieved high levels of business performance seek a mini-project to develop an even higher level of understanding of the strategies that they have in place in order to achieve this business success. This project may have some risk of being supported because as growers are faced with increasingly tight margins over the next 12 months and beyond they may view providing this information as being counter-productive to their long term survival. Particular areas of focus should be to examine daily operational labour efficiencies, business and marketing strategies. Each grower would involve a 1 or 2 day program for each grower with a report provided to each grower following its conclusion and a more general report made available to industry.

4. Marketing Skills Development

This study has again highlighted the poor general performance of growers in terms of the marketing skills that they possess. As the industry moves towards a major potential oversupply situation, growers who have a higher level of marketing skills will have a greater chance of economic survival. Any marketing skills workshops are often met with 'skepticism' by growers and low attendance. A more dynamic approach may involve a multitude of shed meetings where instead of non-industry marketing experts, that industry people including former marketers, retailers etc be in attendance to provide a more 'real' view on the banana supply chain and how fruit is marketed.

5. Human Resource Management Skills Development

Need to develop a commercially focused 'kit' of human resource management strategies that would be of benefit to growers. A project may use se case studies or single page flyers or even a CD to communicate useful information. An approach using general meetings etc is not recommended as an appropriate mechanism to deliver this sort of information to growers. This project could be completed internally by the ABGC with the appropriate support and so be used as another 'plank' of the services provided by their industry association to growers.

6. Sub-Tropical Marketing Program

The growers in NSW are facing significant competitiveness issues when compared with the North Queensland industry. Growers who attended the meetings are aware that they need to change their operational model in future to order to achieve sustainability. The information presented from this study only re-confirmed this observation. The general view is that differentiating their product through the Sub-Tropical Marketing campaign is one of the few alternative strategies that NSW growers possess to achieve this.

CDIPM understands that there is an application to HAL for the continuation of this program. The feedback received from growers would support such an application. CDIPM does however recommend that the proposal should needs to focus on identifying alternative other models that would enhance grower involvement. Models that could be applicable are in existence across horticulture.

7. Alternative Communication Strategies

Banana growers are extremely busy people who typically have the opportunity to attend a meeting nearly every night of the week. Communicators have a greater chance of success of reaching their audience if it does not involve them attending meetings. The oyster industry in 2010 trialed a project that involved growers receiving a text message with snippets of information / hints etc that may (or may not) benefit a grower. This regular 'in your face approach' even though potentially not of benefit to every grower was seen as beneficial by many growers and evidence that their industry levy dollars were working for them. CDIPM would recommend a investigation concerning the feasibility of a similar approach for the banana industry. The project we believe should be 'run' by the ABGC.

Both recommendations (4) and (5) if adopted may benefit from the strategy outlined herein.

8. Chemical Registration Audit

CDIPM recommends that a review be undertaken of all chemicals in use by growers to ensure that the industry is compliant with its community obligations to only use chemicals that are permitted by the Australian Pesticides and Veterinary Medicines Authority.

Acknowledgments

The consultants wish to express their thanks to both Horticulture Australia Ltd and the Australian Banana Growers Council for the opportunity to undertake this consultancy. We greatly enjoyed our continued work in benchmarking the performance of banana growers for the second year.

CDIPM expresses their sincere gratitude to all the growers who willingly gave up their valuable time to contribute to this study. Their overall willingness to provide detailed and often confidential information is greatly appreciated. We trust that the information provided has been of benefit to them.

In particular, we would like to express our gratitude to both Mr Louis Lardi, Yellow Sigatoka Liaison Officer and John Tyas, Industry Services Manager, who provided us with significant assistance in grower identification and provision of directions on project management respectively. .

We look forward, hopefully, to our continued involvement in providing our services to the banana industry.

Selected Growers Comparison

KPI	Value	Minimum	Maximum	Average	Rank	No. of Farms*
Gross Financial Statistics						
Total income ($)	$1,370,578					41
Total gross banana sales ($)	$1,367,678					41
Total non-banana sales ($)	$2,900					41
Administration ($)	$486					41
Contract spraying ($)	$12,225					41
D&A	$76,927					41
Electricity and gas ($)	$698					41
Fertiliser and chemicals ($)	$159,210					41
Field consumables ($)	$598					41
Finance ($)	$9,288					41
Freight and storage ($)	$180,351					41
Fuel and oil ($)	$23,082					41
Hire of plant and equipment ($)	$273					41
Levies ($)	$15,425					41
Insurance ($)	$3,887					41
Lease and rental (non-farm)	$23,400					41
Legal and accounting ($)	$7,979					41
Licenses, permits & fees ($)	$1,848					41
Marketing and promotion ($)	$1,466					41
Miscellaneous ($)	$55					41
Packaging ($)	$191,253					41
Rates ($)	$7,065					41
R&M and replacements ($)	$49,011					41
Telephone and internet ($)	$5,163					41
Wages (employees) and contract labour services ($)	$170,061					41
Wages and on costs – owner ($)	$125,350					41
Summary Gross Farm Statistics ($)						
Total net banana sales ($)	$1,367,678					41
Total off-farm costs ($)	$195,776					41
Total on-farm costs ($)	$873,352					41
Net banana sales per planted	$57,738	$23,583	$92,556	$47,224	11	41

KPI	Value	Minimum	Maximum	Average	Rank	No. of Farms*
Net banana sales per ha of total banana area ($/ha)	$54,927	$23,583	$85,302	$44,686	11	41
Total costs of goods sold ($)	$866,652					41
COGS per planted ha ($/ha)	$36,583	$21,304	$73,054	$40,579	20	41
COGS per ha of total banana area ($/ha)	$34,805	$21,304	$67,600	$38398	21	41
Total gross profit ($)	$503,926					41
Gross profit per planted ha ($/ha)	$21,272	$-1,187	$30,799	$9,984	3	41
Gross profit per ha of total banana area ($/ha)	$20,238	$-1,187	$28,496	$9,447	3	41
Gross profit margin (%)	36.8%	-4.4%	36.8%	19.7%	1	41
Gross profit per carton ($/carton)	$7.51	$-1.28	$8.02	$4.31	3	41
Total expenses ($)	$202,476					41
Expenses per planted ha ($/ha)	$8,547	$1,588	$11,804	$5,178	34	41
Expenses per ha of total banana area ($/ha)	$8,132	$1,450	$11,122	$4,900	36	41
Total net profit ($)	$301,450					41
Net profit per planted ha ($/ha)	$12,725	$-8,184	$23,740	$4,805	5	41
Net profit per ha of total banana area ($/ha)	$12,106	$-8,184	$22,344	$4,547	4	41
Net profit margin (%)	22.0%	-30.3%	31.9%	9.5%	5	41
Net profit per carton ($/carton)	$4.49	$-8.83	$7.36	$2.07	5	41
Total cost per carton ($/carton)	$15.94	$9.20	$37.95	$19.74	5	41
Cost per carton excluding commission and ripening fees	$15.94	$9.20	$37.95	$19.22	7	41
% On Farm Costs (%)						41
% Administration	0.1%	0.0%	8.3%	0.2%	14	41
% Consultant fees	0.0%	0.0%	1.1%	0.5%	22	41
% Contract packing	0.0%	0.0%	53.2%	5.6%	33	41
% Contract spraying	0.0%	0.0%	2.3%	0.8%	15	41
% Electricity and gas	1.4%	0.0%	2.4%	1.0%	34	41
% Depreciation and amortization	8.8%	0.0%	10.0%	1.5%	39	41
% Employment expenses	0.1%	0.0%	0.7%	0.2%	28	41
% Fertiliser and chemicals	18.2%	6.2%	24.3%	14.2%	34	41

KPI	Value	Minimum	Maximum	Average	Rank	No. of Farms*
% Fuel and oil	2.6%	0.0%	5.9%	2.0%	33	41
% Hire of plant and replacement	0.0%	0.0%	9.1%	0.6%	19	41
% Insurance	0.4%	0.0%	1.6%	0.5%	18	41
% Lease and rental (non-financial)	2.7%	0.0%	7.7%	0.7%	38	41
% Legal and accounting	0.9%	0.0%	1.9%	0.3%	36	41
% Licenses, permits and fees	0.2%	0.0%	0.5%	0.1%	32	41
% Marketing and promotion	0.2%	0.0%	0.5%	0.1%	32	41
% Miscellaneous	0.0%	0.0%	1.4%	0.4%	9	41
% Packaging	21.9%	0.0%	22.6%	12.7%	40	41
% Planting materials	0.5%	0.0%	11.4%	0.7%	26	41
% Rates	0.8%	0.0%	1.4%	0.4%	32	41
% Repairs & maintenance and replacements	5.6%	1.8%	16.9%	6.7%	18	41
% Soil, leaf and water testing	0.0%	0.0%	2.0%	0.2%	29	41
% Telephone and internet	0.6%	0.0%	0.9%	0.3%	36	41
% Wages (employees) and contract labour services	19.5%	14.7%	66.3%	40.7%	6	41
% Wages and on costs – owners	14.4%	0.0%	27.6%	5.8%	33	41
% Water purchase	0.0%	0.0%	1.6%	0.3%	38	41
On Farm Costs per Carton ($/carton)						
Administration ($/carton)	$0.01	$0.00	$1.45	$0.03	14	41
Consultant fees ($/carton)	$0.00	$0.00	$0.21	$0.07	22	41
Contract packing ($/carton)	$0.00	$0.00	$6.99	$0.84	333	41
Contract spraying ($/carton)	$0.00	$0.00	$0.36	$0.12	15	41
Electricity and gas ($/carton)	$0.18	$0.00	$0.37	$0.15	31	41
Depreciation and amortization ($/carton)	$1.15	$0.00	$1.94	$0.23	38	41
Employment expenses ($/carton)	$0.01	$0.00	$0.24	$0.03	27	41
Fertiliser and chemicals ($/carton)	$2.37	$0.81	$6.02	$2.14	24	41
Field consumables ($/carton)	$0.01	$0.00	$0.56	$0.24	9	41
Finance costs ($/carton)	$0.14	$0.00	$2.59	$0.25	20	41
Freight inwards ($/carton)	$0.00	$0.00	$0.27	$0.01	27	41

KPI	Value	Minimum	Maximum	Average	Rank	No. of Farms*
Insurance ($/carton)	$0.06	$0.00	$0.28	$0.07	17	41
Lease and rental (non-financial) ($/carton)	$0.35	$0.00	$1.61	$0.11	36	41
Legal and accounting ($/carton)	$0.12	$0.00	$0.68	$0.05	31	41
Licenses, permits and fees ($/carton)	$0.03	$0.00	$0.31	$0.03	23	41
Marketing and promotion ($/carton)	$0.02	$0.00	$0.12	$0.02	29	41
Miscellaneous ($/carton)	$0.00	$0.00	$0.23	$0.06	6	41
Packaging ($/carton)	$2.85	$0.00	$3.71	$1.92	33	41
Planting materials ($/carton)	$0.06	$0.00	$2.46	$0.10	25	41
Rates ($/carton)	$0.11	$0.00	$0.22	$0.06	28	41
Repairs & maintenance and replacements ($/carton)	$0.73	$0.21	$2.82	$1.02	14	41
Soil, leaf and water testing ($/carton)	$0.00	$0.00	$0.31	$0.02	29	41
Telephone and internet ($/carton)	$0.08	$0.00	$0.27	$0.04	33	41
Wages (employees) and contract labour services ($/carton)	$2.54	$2.05	$10.34	$6.13	5	41
Wages and on costs – owners ($/carton)	$1.87	$0.00	$6.02	$0.88	29	41
Water purchase ($/carton)	$0.00	$0.00	$0.25	$0.05	38	41
On-Farm costs per carton ($/carton)	$13.02	$7.72	$34.80	$15.06	7	41
% Off-Farm Costs						
% Freight and storage	92.1%	36.9%	95.0%	70.3%	26	41
% Levies	7.9%	2.6%	11.7%	5.0%	34	41
% Marketing fees and commissions	0.0%	0.0%	54.5%	18.0%	23	41
% Ripening fees	0.0%	0.0%	34.8%	6.8%	29	41
Off-Farm Costs per Carton ($/carton)						
Freight and storage ($/carton)	$2.69	$1.35	$5.11	$3.29	12	41
Levies ($/carton)	$0.23	$0.13	$0.52	$0.23	24	41
Marketing fees and commissions ($/carton)	$0.00	$0.00	$4.32	$0.84	23	41

KPI	Value	Minimum	Maximum	Average	Rank	No. of Farms*
Costs per Planted Ha ($/ha)						
Contract packing fees ($/planted ha)	$0	$0	$18,820	$1,955	33	41
Electricity & gas ($/planted ha)	$516	$0	$894	$358	33	41
Fertiliser & chemicals ($/planted ha)	$6,721	$1,994	$16,870	$4,949	34	41
Field consumables ($/planted ha)	$25	$0	$1,429	$550	9	41
Fuel & oil ($/planted ha)	$974	$0	$2,400	$709	28	41
Packaging ($/planted ha)	$8,073	$0	$9,566	$4,446	38	41
R&M & replacements ($/planted ha)	$2,069	$540	$7,709	$2,356	20	41
Wages (employees) and contract labour services ($/planted ha)	$7,179	$3,779	$26,160	$14,201	5	41
Wages & on costs – owners ($/planted ha)	$5,291	$0	$16,684	$2,031	31	41
Freight & storage ($/planted ha)	$7,613	$2,734	$17,139	$7,624	27	41

Financial) & Selected Growers Comparison

KPI	Value	Minimum	Maximum	Average	Rank	No. of Farms*
Individual Gross Farm Statistics						
Total planted banana area (ha)	23.7ha					41
Total unplanted banana area (ha)	1.2ha					41
Total banana area (ha)	24.9ha					41
Total production – All varieties (cartons)	67,064					
Total Cavendish production (cartons)	67,064					
Total Lady Finger production (cartons)	0					
Total Ducasse production (cartons)	0					
Total Gold finger production (cartons)	0					
Total Plantain production (cartons)	0					
Average age of plantation (years)	2.44	1.26	9.60	4.17		41
Average block size (ha/block)	2.77	1.42	17.40	5.19		41
Production Statistical Analysis						
% Large of total Cavendish production	6.0%			14.7%		41
% XL of total Cavendish production	94.0%			81.1%		41
Labour Productivity						
Total number of FTE's	6.9			729.6		41
No. of FTE's per planted hectare (FTE/ha)	0.29	0.05	0.52	0.28	23	41
No. of FTE's per hectare of farmed area (FTE/ha)	0.28	0.05	0.52	0.27	28	41
No. of cartons per FTE (cartons/FTE)	9,748	3,655	47,847	8,204	15	41
Net banana sales per FTE ($/FTE)	$198,700	$101,152	$1,169,000	$138,267	14	41
Total on-farm costs per FTE	$126,941	$80,811	$837,150	$123,508	22	41

KPI	Value	Minimum	Maximum	Average	Rank	No. of Farms*
hectare (cartons/ha)						
No. of cartons per farmed hectare (cartons/ha)	2,693	927	3,792	2,193	7	41
HR Management						
Degree of reliance on contract labour	1					41
Structured sourcing of new labour	1					41
Degree of reliance on permanent workers	4					41
Do you undertake performance measuring of individual field workers	1					41
Do you undertake performance measuring of individual shed workers	1					41
Clearly defined work activities provided to staff at the commencement of each day	4					41
Level of structuring of farm and packing activities each week / month	3					41
Clearly defined reporting structure	4					41
Do you have a bonus / performance reward system in place for field workers	3					41
Do you have a bonus / performance reward system in place for shed workers	3					41
Business owner / manager approach to a co-operative work environment	4					41
Apparent degree of specialization of critical tasks	3					41
Level of staff turnover	4					41
Do staff undergo a formal /structured approach to job training	2					41
Does the business actively enrol staff in external worker training	1					41
Overall HR management	7					41

(Financial)

KPI	Minimum	Maximum	Average
Farm Statistics – All Growers / Industry Group			
Net banana sales per planted ha ($/ha)	$12,675	$92,556	$44,771
	$11.64	$38.89	$21.06
Net banana sales per ha of total banana area ($/ha)	$12,675	$85,302	$42,603
Average business costs of goods sold ($)			$2,053,306
Average business COGS per planted ha ($/ha)	$14,509	$73,054	$39,012
Average business COGS per ha of total banana area ($/ha)	$13,958	$67,600	$37,122
Average business gross profit ($)			$463,165
Average business gross profit per planted ha ($/ha)	$-14,655	$30,799	$8,800
Average business gross profit per ha of total banana area ($/ha)	$-14,655	$28,733	$8,374
Gross profit per carton ($/carton)	$-16.05	$14.47	$4.14
Average business gross profit margin (%)	-64.6%	37.1%	18.4%
Average business expenses ($)			$278,566
Average business expenses per planted ha ($/ha)	$687	$21,556	$5,293
Average business expenses per ha of total banana area ($/ha)	$687	$21,556	$5,036
Average business net profit ($)			$184,599
Average net profit per planted ha ($/ha)	$-34,604	$23,740	$3,507
Average net profit per ha of total banana area ($/ha)	$-34,604	$22,344	$3,337
Average business net profit ($)	$-34,604	$23,740	$3,507
Average net profit margin (%)	-103.5%	31.9%	7.3%
Net profit per carton ($/carton)	$-25.69	$10.73	$1.65
Total cost per carton ($/carton)	$12.35	$52.84	$20.84
Average cost per carton excluding commission and ripening fees ($/carton)	$12.35	$52.84	$19.73
% On-Farm Costs - All Growers / Industry Group			
% Administration	0.0%	8.3%	0.2%
% Consultant fees	0.0%	1.1%	0.4%
% Contract packing	0.0%	53.2%	5.5%
% Contract spraying	0.0%	2.4%	0.7%
% Electricity and gas	0.0%	3.3%	1.1%
% Depreciation and amortization	0.0%	12.1%	1.9%
% Employment expenses	0.0%	0.7%	0.2%

KPI	Minimum	Maximum	Average
% Finance costs	0.0%	10.7%	1.8%
% Freight inwards	0.0%	2.0%	0.1%
% Fuel and oil	0.0%	5.9%	2.1%
% Hire of plant and replacement	0.0%	9.1%	0.6%
% Insurance	0.0%	2.1%	0.4%
% Lease and rental (non-financial)	0.0%	7.7%	0.7%
% Legal and accounting	0.0%	1.9%	0.3%
% Licenses, permits and fees	0.0%	1.6%	0.2%
% Marketing and promotion	0.0%	1.3%	0.2%
% Miscellaneous	0.0%	5.1%	0.4%
% Packaging	0.0%	22.6%	12.3%
% Planting materials	0.0%	11.4%	0.6%
% Rates	0.0%	3.0%	0.4%
% Repairs & maintenance and replacements	1.8%	24.6%	6.9%
% Soil, leaf and water testing	0.0%	2.0%	0.1%
% Telephone and internet	0.0%	2.0%	0.3%
% Wages (employees) and contract labour services	0.0%	66.3%	40.5%
% Wages and on costs – owners	0.0%	83.8%	6.4%
% Water purchase	0.0%	7.7%	0.6%
On-Farm Costs per Carton - All Growers / Industry Group			
Administration ($/carton)	$0.00	$1.45	$0.03
Consultant fees ($/carton)	$0.00	$0.21	$0.07
Contract packing ($/carton)	$0.00	$12.51	$0.89
Contract spraying ($/carton)	$0.00	$0.58	$0.12
Electricity and gas ($/carton)	$0.00	$0.98	$0.18
Depreciation and amortization ($/carton)	$0.00	$2.53	$0.30
Employment expenses ($/carton)	$0.00	$0.24	$0.03
Fertiliser and chemicals ($/carton)	$0.21	$7.82	$2.24
Field consumables ($/carton)	$0.00	$0.77	$0.23
Finance costs ($/carton)	$0.00	$4.12	$0.29
Freight inwards ($/carton)	$0.00	$0.27	$0.01
Fuel and oil ($/carton)	$0.00	$1.51	$0.34
Hire of plant and replacement ($/carton)	$0.00	$1.26	$0.10
Insurance ($/carton)	$0.00	$0.36	$0.07
Lease and rental (non-financial) ($/carton)	$0.00	$2.16	$0.11

KPI	Minimum	Maximum	Average
Miscellaneous ($/carton)	$0.00	$0.82	$0.06
Packaging ($/carton)	$0.00	$4.53	$1.99
Planting materials ($/carton)	$0.00	$2.46	$0.10
Rates ($/carton)	$0.00	$0.67	$0.07
Repairs & maintenance and replacements ($/carton)	$0.21	$5.81	$1.12
Soil, leaf and water testing ($/carton)	$0.00	$0.31	$0.02
Telephone and internet ($/carton)	$0.00	$0.39	$0.04
Wages (employees) and contract labour services ($/carton)	$0.00	$25.15	$6.57
Wages and on costs – owners ($/carton)	$0.00	$14.26	$1.03
Water purchase ($/carton)	$0.00	$2.27	$0.09
On-Farm costs per carton ($/carton)	$10.62	$48.76	$16.23
% Off-Farm Costs - All Growers / Industry Group			
% Freight and storage	7.2%	100.0%	70.7%
% Levies	0.0%	92.8%	5.2%
% Marketing fees and commissions	0.0%	56.1%	17.7%
% Ripening fees	0.0%	34.8%	6.4%
% Off-Farm Costs per Carton - All Growers / Industry Group			
Freight and storage ($/carton)	$0.02	$5.11	$3.26
Levies ($/carton)	$0.00	$0.67	$0.24
Marketing fees and commissions ($/carton)	$0.00	$4.32	$0.82
Ripening fees ($/carton)	$0.00	$1.80	$0.30
Off-Farm costs per carton ($/carton)	$0.23	$8.40	$4.62

(Non-Financial)

KPI	Minimum	Maximum	Average
Cavendish Production Statistical Analysis – All Growers / Industry Group			
Average Cavendish production – medium (cartons)			2,850
Average Cavendish production – large (cartons)			21,328
Average Cavendish production – XL (cartons)			117,788
Average Cavendish production – 2XLmedium (cartons)			2,534
Average Cavendish production – other 1 (cartons)			605
Average Cavendish production – other 2 (cartons)			121
% Medium of total production – Cavendish			2.0%
% Large of total production – Cavendish			14.7%
% XL of total production – Cavendish			81.1%
% 2XL of total production – Cavendish			1.7%
% Other 1 of total production – Cavendish			0.4%
% Other 2 of total production – Cavendish			0.1%
Lady Finger Production Statistical Analysis – All Growers / Industry Group			
Average Lady Finger production – large (cartons)			26
Average Lady Finger production – XL (cartons)			10,722
% Large of total production – Lady Finger			3.4%
% XL of total production – Lady Finger			93.3%
% Other 1 of total production – Lady Finger			3.4%
% Other 2 of total production – Lady Finger			2.1%
Total Production Statistical Analysis – All Growers / Industry Group			
% Cavendish production of total production			99.5%
% Lady Finger production of total production			0.5%
% Ducasse production of total production			0.0%
% Gold Finger production of total production			0.0%
% Plantain production of total production			0.0%
Total Production Statistical Analysis – All Growers / Industry Group			
Average no. of FTE's per planted hectare (FTE/ha)			0.28
Average no. of FTE's per hectare of farmed area (FTE/ha)			0.27

KPI	Minimum	Maximum	Average
Average on-farm costs per FTE ($/FTE)			$123,508
Total Production Statistical Analysis – All Growers / Industry Group			
No. of cartons per planted hectare (cartons/ha)			2,317
No. of cartons per farmed ha (cartons/ha)			2,193
Employment Statistical Analysis – All Growers / Industry Group			
Total no. of family FTE's			75.5
Total no. of employee FTE's			654.1
Average % of family FTE's of total			10.3%
Average % of employee FTE's of total			89.7%
% Australian employees of total			55.1%
% Backpacker employees of total			29.4%
% Asian / Indian employees of total			14.6%
% Pacific Islander / PNG employees of total			0.5%
% Other employees of total			0.2%
% Don't know employees of total			0.0%
Farm Statistics – All Growers / Industry Group			
Average age of all plantations (years)			4.17
Average block size (ha/block)			5.19
Total banana area (ha)			146.7
Total unplanted banana area (ha)			2,582.8
Total banana area (ha)			2,729.5
Planting Material – All Growers / Industry Group			
% Tissue culture of total planted area			26%
% Tissue culture (own nursery) of total planted area			1%
% Bits – own plantation of total planted area			69%
% Bits – another plantation of total planted area			3%
% Pots of total planted area			2%
Irrigation Method – All Growers / Industry Group			
% area utilizing a travelling irrigator (%)			1%
% area utilizing furrow irrigation (%)			0%
% area utilizing high volume sprinklers (%)			6%

KPI	Minimum	Maximum	Average
% area utilizing overhead irrigation (%)			12%
Plant Density at 1st Ratoon – All Growers / Industry Group			
% of blocks with plant density of <500 plants/ha (%)			4%
% of blocks with plant density of 500-749 plants/ha (%)			0%
% of blocks with plant density of 750-999 plants/ha (%)			0%
% of blocks with plant density of 1,000-1,199 plants/ha (%)			2%
% of blocks with plant density of 1,200-1,399 plants/ha (%)			18%
% of blocks with plant density of 1,400-1,599 plants/ha (%)			30%
% of blocks with plant density of 1,600-1,799 plants/ha (%)			32%
% of blocks with plant density of 1,800-1,999 plants/ha (%)			13%
% of blocks with plant density of 2,000 plants/ha (%)			0%
Species Grown – All Growers / Industry Group			
% of area planted to Cavendish (%)			98%
% of area planted to Lady Finger (%)			1%
% of area planted to Ducasse (%)			0%
% of area planted to Gold Finger (%)			0%
% of area planted to Plantain (%)			0%
% of area planted to Other (%)			0%
Soil Testing Prior to Planting – All Growers / Industry Group			
Every time (%)			90%
Frequently (%)			7%
Occasionally (%)			4%
Never (%)			0%
Preferred Planting Month (Start) – All Growers / Industry Group			
January (%)			5%
February (%)			0%
March (%)			0%
April (%)			0%

KPI	Minimum	Maximum	Average
August (%)			32%
September (%)			34%
October (%)			5%
November (%)			5%
December (%)			0%
Preferred Planting Month (Finishing) – All Growers / Industry Group			
January (%)			0%
February (%)			2%
March (%)			0%
April (%)			0%
May (%)			0%
June (%)			2%
July (%)			2%
August (%)			5%
September (%)			24%
October (%)			41%
November (%)			10%
December (%)			12%
Preferred Banana Sucker Removal Method (Plant Crop) – All Growers / Industry Group			
Non-chemical (%)			1%
24-D (%)			3%
Diesel (%)			15%
Kerosene (%)			11%
Diesel / Kerosene (%)			22%
Barring (%)			0%
Shovel / gouge (%)			3%
Cane knife (%)			44%
Other (%)			2%
Preferred Banana Sucker Removal Method (Plant Crop) – All Growers / Industry Group			
Non-chemical (%)			0%
24-D (%)			29%
Diesel (%)			8%
Kerosene (%)			3%
Diesel / Kerosene (%)			12%

KPI	Minimum	Maximum	Average
Other (%)			0%
Frequency of Solid Fertiliser Application – All Growers / Industry Group			
Variable as needed (%)			3%
Every week (%)			2%
Every two weeks (%)			21%
Every month (%)			59%
Every 6 weeks (%)			7%
4x per year (%)			7%
3x per year (%)			0%
2x per year (%)			0%
Nil (%)			3%
Soil Borne Pests – All Growers / Industry Group			
Have you treated for nematodes in the last 12 months – Yes (%)			23%
Have you treated for nematodes in the last 12 months – No (%)			77%
Have you treated for cane beetle in the last 12 months – Yes (%)			69%
Have you treated for cane beetle in the last 12 months – No (%)			31%
Have you treated for weevil borer in the last 12 months – Yes (%)			79%
Have you treated for weevil borer in the last 12 months – No (%)			21%
Agronomist Services – All Growers / Industry Group			
Have you used the services of an agronomist in the last 12 months? Yes – private / company individual (%)			49%
Have you used the services of an agronomist in the last 12 months? Yes – employee of a chemical company (%)			23%
Have you used the services of an agronomist in the last 12 months? Yes – inhouse (%)			0%
Have you used the services of an agronomist in the last 12 months? No (%)			28%
Average Pesticide / Fungicide Spray Frequency (Summer) – All Growers / Industry Group			

KPI	Minimum	Maximum	Average
Fortnightly (%)			92%
Monthly (%)			0%
Bi-monthly (%)			0%
Quarterly (%)			0%
Nil (%)			0%
Variable – as needed (%)			0%
Average Pesticide / Fungicide Spray Frequency (Winter) – All Growers / Industry Group			
2x week (%)			0%
Weekly (%)			0%
10-12 days (%)			0%
Fortnightly (%)			68%
Monthly (%)			27%
Bi-monthly (%)			2%
Quarterly (%)			2%
Nil (%)			0%
Variable – as needed (%)			0%
Principle Pesticide / Fungicide Application Method – All Growers / Industry Group			
All aerial (%)			51%
Mostly aerial / some ground (%)			29%
Equal aerial and ground (%)			0%
Mostly ground / some aerial (%)			10%
All ground (%)			10%
Other (%)			0%
Period of Time to Bagging from Bell Injecting – All Growers / Industry Group			
Same time (%)			0%
1-5 days (%)			3%
5-7 days (%)			14%
7-10 days (%)			43%
10-14 days (%)			35%
14-21 days (%)			5%
>21 days (%)			0%
Not applicable (%)			0%
Principal Bag Type Used – All Growers / Industry Group			

KPI	Minimum	Maximum	Average
Cotton unsown (%)			9%
Bunch Age Identification Method – All Growers / Industry Group			
Bag colour (%)			35%
String colour (%)			20%
Paint (%)			17%
Bag / string (%)			14%
Bag / paint (%)			7%
String / paint (%)			4%
Bag / string / paint (%)			2%
No method used (%)			0%
Other (%)			0%
Packing Equipment Type – All Growers / Industry Group			
Rotary wheel (%)			60%
Trough wheel (%)			0%
Belt conveyor (%)			0%
Water & belt conveyor (%)			40%
Other (%)			0%
Packing Equipment Type – All Growers / Industry Group			
Do you know the time product is precooled prior to transportation – Yes (%)			55%
Do you know the time product is precooled prior to transportation – No (%)			45%
Do you know the storage temperature product is precooled to prior to transportation – Yes (%)			38%
Do you know the storage temperature product is precooled to prior to transportation – No (%)			62%
% Sold to Each Marketing Channel (next transaction point) – All Growers / Industry Group			
Sold direct to major chain retailers (%)			2.9%
Sold direct to other chain retailers (not WW or Coles) (%)			0.0%
Sold direct to independent retailers (greengrocers) (%)			0.0%
Sold to metropolitan wholesalers (agent or merchant) (%)			54.0%
Sold via a broker (%)			40.4%

KPI	Minimum	Maximum	Average
Otherwise value added prior to resale (%)			0.0%
Customer not known or unavailable (%)			2.4%
% Sold to Each – All Growers / Industry Group			
Queensland (%)			13%
New South Wales (%)			34%
Victoria (%)			16%
South Australia (%)			2%
Tasmania (%)			0%
ACT (%)			0%
Northern Territory (%)			0%
Western Australia (%)			8%
Customer not known or unavailable (%)			27%
Sales Method with Principal Customer – All Growers / Industry Group			
Weekly fixed price (%)			5%
Pooled returns (%)			10%
Merchant transaction (%)			39%
Agency transaction (%)			20%
Hybrid transaction (%)			10%
Brokerage (%)			17%
Don’t know (%)			0%

Appendix 5 – Individual Grower – Comparative Year Report (Financial)

KPI Performance Summary – Multiple Years - Financial		2009, 2010 Grower Example Pty Ltd	

KPI	2009	Industry 2009	2010	Industry 2010
Summary Gross Farm Statistics ($)				
Total off-farm costs ($)	$111,031	$330,075	$195,776	$516,567
Total on-farm costs ($)	$670,984	$1,060,933	$873,352	$1,815,305
Net banana sales per planted ha ($/ha)	$43,493	$43,332	$57,732	$44,771
Net banana sales per carton ($/carton)	$16.99	$20.04	$20.39	$21.06
Net banana sales per ha of total banana area ($/ha)	$41,380	$40,534	$54,927	$42,603
Total costs of goods sold ($)	$661,317		$866,652	
COGS per planted ha ($/ha)	$27,915	$37,735	$36,583	$39,012
COGS per ha of total banana area ($/ha)	$26,559	$35,298	$34,805	$37,122
Total gross profit ($)	$372,053		$503,926	
Gross profit per planted ha ($/ha)	$15,724	$8,791	$21,272	$8,800
Gross profit per ha of total banana area ($/ha)	$14,960	$8,224	$20,238	$8,374
Gross profit margin (%)	36.0%	18.9%	36.8%	18.4%
Total expenses ($)	$6.14	$4.07	$7.51	$4.14
Expenses per planted ha ($/ha)	$5,095	$4,042	$8,547	$5,293
Expenses per ha of total banana area ($/ha)	$4,847	$3,781	$8,132	$5,035
Total net profit ($)	$251,805		$301,450	
Net profit per planted ha ($/ha)	$10,629	$4,750	$12,725	$3,507
Net profit per ha of total banana area ($/ha)	$10,113	$4,43	$12,106	$3,337
Net profit margin (%)	24.4%	10.2%	22.05	7.3%
Net profit per carton ($/carton)	$4.15	$2.20	$4.49	$1.65
Total cost per carton ($/carton)	$12.89	$19.32	$15.94	$20.84
Cost per carton excluding commission & ripening fees	$12.89	$18.22	$15.94	$19.73
% On Farm Costs (%)				
% Administration	0.0%	0.1%	0.1%	0.2%
% Consultant fees	0.0%	0.4%	0.0%	0.4%
% Contract packing	0.0%	8.7%	0.0%	5.5%
% Contract spraying	0.0%	0.5%	0.0%	0.7%
% Electricity and gas	1.3%	0.8%	1.4%	1.1%
% Depreciation and amortization	0.0%	0.6%	8.8%	1.9%
% Employment expenses	0.0%	0.2%	0.1%	0.2%

KPI Performance Summary – Multiple Years - Financial		2009, 2010 Grower Example Pty Ltd	

KPI	2009	Industry 2009	2010	Industry 2010
% Fertiliser and chemicals	22.0%	13.5%	18.2%	13.8%
% Field consumables	0.0%	1.5%	0.1%	1.4%
% Finance costs	0.8%	1.2%	1.1%	1.8%
% Freight inwards	0.0%	0.1%	0.0%	0.1%
% Fuel and oil	2.8%	2.9%	2.6%	2.1%
% Hire of plant and replacement	0.5%	0.5%	0.0%	0.6%
% Insurance	1.7%	0.6%	0.4%	0.4%
% Lease and rental (non-financial)	3.5%	0.9%	2.7%	0.7%
% Legal and accounting	0.3%	0.5%	0.9%	0.3%
% Licenses, permits and fees	0.1%	0.1%	0.2%	0.2%
% Marketing and promotion	0.1%	0.1%	0.2%	0.2%
% Miscellaneous	0.3%	0.2%	0.0%	0.4%
% Packaging	21.5%	11.9%	21.9%	12.3%
% Planting materials	0.2%	0.1%	0.5%	0.6%
% Rates	1.1%	0.5%	0.8%	0.4%
% Repairs & maintenance and replacements	7.3%	5.7%	5.6%	6.9%
% Soil, leaf and water testing	0.0%	0.1%	0.0%	0.1%
% Telephone and internet	0.6%	0.2%	0.6%	0.3%
% Wages (employees) and contract labour services	20.2%	38.9%	19.5%	40.5%
% Wages and on costs – owners	14.9%	8.5%	14.4%	6.4%
% Water purchase	0.0%	0.5%	0.0%	0.6%
On Farm Costs per Carton ($/carton)				
Administration ($/carton)	$0.00	$0.01	$0.01	$0.03
Consultant fees ($/carton)	$0.00	$0.06	$0.00	$0.07
Contract packing ($/carton)	$0.00	$1.28	$0.00	$0.88
Contract spraying ($/carton)	$0.00	$0.08	$0.00	$0.11
Electricity and gas ($/carton)	$0.14	$0.12	$0.18	$0.18
Depreciation and amortization ($/carton)	$0.00	$0.09	$1.15	$0.30
Employment expenses ($/carton)	$0.00	$0.04	$0.01	$0.03
Fertiliser and chemicals ($/carton)	$2.43	$1.99	$2.37	$2.23
Field consumables ($/carton)	$0.10	$0.22	$0.01	$0.23
Finance costs ($/carton)	$0.09	$0.17	$0.14	$0.29
Freight inwards ($/carton)	$0.00	$0.02	$0.00	$0.01
Fuel and oil ($/carton)	$0.31	$0.42	$0.34	$0.34
Hire of plant and replacement ($/carton)	$0.05	$0.07	$0.00	$0.10

KPI Performance Summary – Multiple Years - Financial		2009, 2010 Grower Example Pty Ltd	

KPI	2009	Industry 2009	2010	Industry 2010
Insurance ($/carton)	$0.18	$0.09	$0.06	$0.07
Lease and rental (non-financial) ($/carton)	$0.39	$0.14	$0.35	$0.11
Legal and accounting ($/carton)	$0.04	$0.07	$0.12	$0.05
Licenses, permits and fees ($/carton)	$0.01	$0.02	$0.03	$0.03
Marketing and promotion ($/carton)	$0.01	$0.02	$0.02	$0.02
Miscellaneous ($/carton)	$0.03	$0.03	$0.00	$0.06
Packaging ($/carton)	$2.38	$1.76	$2.85	$1.98
Planting materials ($/carton)	$0.02	$0.02	$0.06	$0.10
Rates ($/carton)	$0.12	$0.08	$0.11	$0.07
Repairs & maintenance and replacements ($/carton)	$0.81	$0.84	$0.73	$1.11
Soil, leaf and water testing ($/carton)	$0.00	$0.02	$0.00	$0.02
Telephone and internet ($/carton)	$0.06	$0.03	$0.08	$0.04
Wages (employees) and contract labour services ($/carton)	$2.24	$5.73	$2.54	$6.52
Wages and on costs – owners ($/carton)	$1.65	$1.25	$1.87	$1.02
Water purchase ($/carton)	$0.00	$0.07	$0.00	$0.09
On-Farm costs per carton ($/carton)	$11.06	$14.74	$13.02	$16.10
% Off-Farm Costs				
% Freight and storage	86.1%	70.9%	92.1%	70.7%
% Levies	13.9%	5.1%	7.9%	5.2%
% Marketing fees and commissions	0.0%	21.6%	0.0%	17.7%
% Ripening fees	0.0%	2.4%	0.0%	6.4%
% Off-Farm Costs per Carton				
Freight and storage ($/carton)	$1.58	$3.25	$2.69	$3.24
Levies ($/carton)	$0.25	$0.23	$0.23	$0.24
Marketing fees and commissions ($/carton)	$0.00	$0.99	$0.00	$0.81
Ripening fees ($/carton)	$0.00	$0.11	$0.00	$0.30
Off-Farms costs per carton ($/carton)	$1.83	$4.58	$2.92	$4.58
Costs per Planted Ha				
Contract packing fees ($/planted ha)	$0	$2,765	$0	$1,888
Electricity & gas ($/planted ha)	$356	$266	$515	$382
Fertiliser & chemicals ($/planted ha)	$6,219	$4,313	$6,721	$4,766
Field consumables ($/planted ha)	$264	$480	$25	$497
Fuel & oil ($/planted ha)	$787	$910	$974	$724
Packaging ($/planted ha)	$6,101	$3,795	$8,073	$4,234

KPI Performance Summary – Multiple Years - Financial		2009, 2010 Grower Example Pty Ltd	

KPI	2009	Industry 2009	2010	Industry 2010
R&M & replacements ($/planted ha)	$2,077	$1,812	$2,069	$2,385
Wages (employees) and contract labour services ($/planted ha)	$5,729	$12,389	$7,179	$13,955
Wages & on costs – owners ($/planted ha)	$4,221	$2,693	$5,291	$2,192
Freight & storage ($/planted ha)	$4,035	$7,029	$7,613	$6,940

Appendix 6 – Individual Grower – Comparative Year Report (Non-Financial)

KPI Performance Summary – Multiple Years – Non-Financial		2009, 2010 Grower Example Pty Ltd	

KPI	2009	Industry 2009	2010	Industry 2010
Summary Gross Farm Statistics ($)				
Total planted banana area (ha)	23.7		23.7	
Total unplanted banana area (ha)	1.2		1.2	
Total banana area (ha)	24.9		24.9	
Total production – All varieties (cartons)	60,652		67,064	
Total Cavendish production (cartons)	60,652		67,064	
Total Lady Finger production (cartons)	0		0	
Total Ducasse production (cartons)	0		0	
Total Gold finger production (cartons)	0		0	
Total Plantain production (cartons)	0		0	
Average age of plantation (years)	1.63	3.99	2.44	4.29
Average block size (ha/block)	3.56	4.91	2.77	4.76
Production Statistical Analysis				
% Small of total Cavendish production	0.0%	0.0%	0.0%	0.0%
% Medium of total Cavendish production	0.0%	5.0%	0.0%	3.2%
% Large of total Cavendish production	4.4%	19.8%	6.0%	15.3%
% XL of total Cavendish production	95.6%	72.5%	94.0%	79.2%
% 2XL of total Cavendish production	0.0%	0.3%	0.0%	1.7%
% Other 1 of total Cavendish production	0.0%	2.2%	0.05	0.6%
% Other 2 of total Cavendish production	0.0%	0.2%	0.05	0.1%
Labour Productivity				
Total number of FTE's	5.3	552.9	6.9	865.5
No. of FTE's per planted hectare (FTE/ha)	0.22	0.29	0.29	0.29
No. of FTE's per hectare of farmed area (FTE/ha)	0.21	0.27	0.28	0.27
No. of cartons per FTE (cartons/FTE)	11,531	7,422	9,748	9,748
Net banana sales per FTE ($/FTE)	$195,884	$122,875	$198,790	$129,386
Total on-farm costs per FTE ($/FTE)	$127,563	$109,355	$126,941	$119,621
Production Productivity				

KPI Performance Summary – Multiple Years – Non-Financial		2009, 2010 Grower Example Pty Ltd	

KPI	2009	Industry 2009	2010	Industry 2010
No. of cartons per planted hectare (cartons/ha)	2,560	2,162	2,831	2,142
No. of cartons per farmed hectare (cartons/ha)	2,436	2,023	2,693	2,038

Appendix 7 – List of Financial and Non-Financial All Growers / Industry Group Charts

All Growers / Industry Group Financial Report Title
% Consultant Fees of Total On-Farm Costs – 2010
% Contract Packing of Total On-Farm Costs – 2010
% Contract Spraying of Total On-Farm Costs – 2010
% Electricity & Gas of Total On-Farm Costs – 2010
% Fertiliser & Chemicals of Total On-Farm Costs – 2010
% Field Consumables of Total On-Farm Costs – 2010
% Finance Costs of Total On-Farm Costs – 2010
% Freight & Storage of Total Off-Farm Costs – 2010
% Fuel & Oil of Total On-Farm Costs – 2010
% Insurance of Total On-Farm Costs – 2010
% Legal & Accounting of Total On-Farm Costs – 2010
% Levies of Total Off-Farm Costs – 2010
% Marketing Fees & Commissions of Total Off-Farm Costs - 2010
% Miscellaneous of Total On-Farm Costs – 2010
% Packaging of Total On-Farm Costs – 2010
% Ripening Fees of Total Off-Farm Costs – 2010
% Telephone & Internet of Total On-Farm Costs – 2010
% Wages (employees) and Contract Labour Services of Total On-Farm Costs – 2010
% Wages & On Costs - Owners of Total On-Farm Costs – 2010
Consultant Fees - $ per carton – 2010
Contract Packing Fees - $ per carton – 2010
Contract Packing Fees - $ per planted ha – 2010
Contract Spraying - $ per carton – 2010
Electricity & Gas - $ per carton – 2010
Electricity & Gas - $ per planted ha – 2010
Fertiliser & Chemicals - $ per carton – 2010
Fertiliser & Chemicals - $ per planted ha – 2010
Field Consumables - $ per carton – 2010
Field Consumables - $ per planted ha – 2010
Finance Costs - $ per carton – 2010
Freight & Storage - $ per carton – 2010
Freight & Storage - $ per planted ha – 2010
Fuel & Oil - $ per carton – 2010
Fuel & Oil - $ per planted ha – 2010
Insurance - $ per carton – 2010
Legal & Accounting - $ per carton – 2010
Levies - $ per carton – 2010
Marketing Fees & Commissions - $ per carton – 2010
Miscellaneous - $ per carton – 2010
Packaging - $ per carton – 2010
Packaging - $ per carton – 2010
R&M & Replacements - $ per carton – 2010

All Growers / Industry Group Financial Report Title
R&M & Replacements - $ per carton – 2010
Ripening Fees - $ per carton 2010
Telephone & Internet - $ per carton – 2010
Wages (employees) & Contract Labour Services - $ per carton - 2010
Wages (employees) & Contract Labour Services - $ per planted ha - 2010
Wages & On Costs - Owners - $ per carton - 2010
Wages & On Costs - Owners - $ per planted ha - 2010
Cost of Goods sold per Planted Ha - 2010
Expenses per Planted Ha - 2010
Gross Profit Margin - % - 2010
Gross Profit per Carton ($/carton) - 2010
Gross Profit per Planted Ha ($/ha) – 2010
Net Banana Sales per Planted Ha ($/ha)- 2010
Net Profit Per Planted Ha - $/ha – 2010
Net Profit Margin (%) – 2010
Net Profit per Carton ($/carton) - 2010
Net Profit per Planted Ha ($/ha) – 2010
Total Cost per Carton – 2010
Total Off-Farm Cost Costs - $ per carton – 2010
Total On-Farm Cost Costs - $ per carton – 2010
Total On-Farm Costs per FTE – 2010

All Growers / Industry Group Non-Financial Report Title
% Banana production by Variety – 2010
% Cavendish Pack Size – 2010
% Ducasse Pack Size – 2010
% Gold Finger Pack Size – 2019
% Lady Finger Pack Size – 2010
% Plantain Pack Size - 2010
Area Planted to Selected Varieties - 2010
Average Period of Time from Bell Injection to Bagging – 2010
Banana Irrigation Method – 2010
Banana Unloading Method – 2010
Destination of Bananas by State - 2010
Frequency of Pesticide and Fungicide Applications in Summer – 2010
Frequency of Pesticide and Fungicide Applications in Winter – 2010
Frequency of Solid Fertiliser Application - 2010
Off-Farm Banana Production Costs x Expenditure Class - $ per carton – 2010
Off-Farm Banana Production Costs x Expenditure Class – % of Total – 2010
On-Farm Banana Production Costs x Expenditure Class - $ per carton – 2010
On-Farm Banana Production Costs x Expenditure Class – % of Total - 2010

All Growers / Industry Group Non-Financial Report Title
Packing Equipment Type - 2010
Pesticide / Fungicide Application Method - 2010
Plant Density at 1st Ratoon – 2010
Preferred Banana Sucker Removal Method for Plant Crop – 2010
Preferred Banana Sucker Removal Method for Ratoon Crop – 2010
Principal Bunch Age Identification Method – 2010
Principal Type of Banana Cover Used – 2010
Source of Labour for Selected Growers – 2010
Sources for Planted Material - 2010
Transaction Type Between Grower & Customer – 2010
Average Age of Plantation (years) – 2010
Cartons per Planted Ha – 2010
Net Banana Sales per FTE – 2010
No. of Cartons per FTE – 2010
No. of FTE's per Planted Hectare - 2010
% of Total Cartons Sold to Each Marketing Channel - 2010

Appendix 8 – List of Qualitative Benchmarking Reports

Qualitative Report Title
Employment & Human Resource Management
Discussion on employment levels
HR management strategies or principles
Signed Horticultural Code of Conduct agreement with marketer
Sourcing new labour – Why use these methods?
Discussion on contract services provided
Discussion on permanent field & shed workers
Performance measuring of individual field workers, If yes provide details
Performance measuring of individual shed workers, If yes provide details
Discussion on level of structuring of farm packing activities
Do you have a bonus / performance reward system in place for field workers
Do you have a bonus / performance reward system in place for shed workers
Discussion on worker payments
Planting & Sucker Management
Site preparation
Description of planting method
Discussion on sucker removal – plant
Discussion on sucker removal – ratoon
Discussion on sucker selection
Factors influencing choice of planting density
Factors influencing planting date
Ground preparation program
Preplant fertilizer strategy
Irrigation & Fertiliser
Principal irrigation method
Irrigation method (details)
Discussion on irrigation scheduling
Factors influencing choice of irrigation method
Fertigation application strategy (summer)
Fertigation application strategy (winter)
Foliar fertilizer application strategy (summer)
Foliar fertilizer application strategy (winter)
Frequency of fertigation application
Frequency of foliar fertilizer application (summer)
Frequency of foliar fertilizer application (winter)
Frequency of foliar fertilizer application (summer)
Frequency of foliar fertilizer application (summer)
How often is leaf analysis undertaken?
How often soil analysis undertaken?
No. of irrigations per week – summer (when dry)
No. of irrigations per week – winter (when dry)
Solid fertilizer application strategy (summer)

Qualitative Report Title
Solid fertilizer application strategy (winter)
Pest & Disease
Deleafing strategy
Discuss nematode control methods
Discussion on agronomist services
Discussion on cane beetle control methods
Discussion on cane beetle control methods
Discussion on herbicide application strategy
Discussion on pest management
Discussion on weevil borer control methods
If you use agronomy services, how often do you use these services?
In the 12 month period did you use the services of an agronomist
Pest management application methods
Spray frequency – summer
Spray frequency – winter
Bell Injection & Bagging
Average no. of times each bag used
Cost per bag (min) $/bag
Cost per bag (max) $/bag
Discussion on bag cost
Discussion on bagging process
Discussion on bell injection method
Discussion on bunch age identification method
Factors influencing choice of bag type
Inspection protocol for emerged bells
Period of time from bell injection to bagging
Bunch Management
% Plantation nurse suckered
Bunch maturity assessment
Bunch support method
Bunch trimming strategy
Do you practice nurse suckering?
Discuss nurse suckering method
How is the nurse sucker removed?
Why do you or why do you not practice nurse suckering?
Harvesting
Average no. of bunches per trailer
Average no. of trailers filled per day
Discussion on operation of the harvest team
Factors influencing choice of transportation method
No. of crew per harvest team
Other activities undertaken by harvest team

Qualitative Report Title
Discussion on transportation method
Packing General
Average packing rate – cartons per man hour
Cost per carton (ex GST)
Discussion on palletizing process
Transportation cost discussion
Transportation method
Packing – Own fruit only
Own packing shed (pack own fruit only) – Bunch unloading method
Own packing shed (pack own fruit only) – Cost per carton (ex GST)
Own packing shed (pack own fruit only) – Discussion bunch unloading method and technology
Own packing shed (pack own fruit only) – Discussion on dehanding process
Own packing shed (pack own fruit only) – Discussion on packing formats
Own packing shed (pack own fruit only) – Discussion palletizing process
Own packing shed (pack own fruit only) – Discussion on temperature management
Own packing shed (pack own fruit only) – Discussion packing operation
Own packing shed (pack own fruit only) – Factors influencing choice of packing equipment
Own packing shed (pack own fruit only) – Factors influencing choice of transportation method
Own packing shed (pack own fruit only) – Length of time precooled prior to transportation (min)
Own packing shed (pack own fruit only) - Length of time precooled prior to transportation (max)
Own packing shed (pack own fruit only) – Maintain pallet integrity method
Own packing shed (pack own fruit only) – Packing equipment
Own packing shed (pack own fruit only) – Precooling of bananas after packing
Own packing shed (pack own fruit only) – Temperature monitored prior to dispatch
Own packing shed (pack own fruit only) – Transport cost discussion
Packing – Own & Contract for Others
Own packing shed (pack own fruit and others) - % of bananas that are contract packed
Own packing shed (pack own fruit and others) – Bunch unloading method
Own packing shed (pack own fruit and others) – Cost per carton (ex GST)
Own packing shed (pack own fruit and others) – Discussion on bunch unloading process & technology
Own packing shed (pack own fruit and others) – Discussion dehanding process
Own packing shed (pack own fruit and others) – Discussion on packing formats
Own packing shed (pack own fruit and others) – Discussion on palletizing process
Own packing shed (pack own fruit and others) – Discussion on temperature management
Own packing shed (pack own fruit and others) – Discussion packing operation
Own packing shed (pack own fruit and others) – Factors influencing choice of packing equipment
Own packing shed (pack own fruit and others) – Factors influencing choice of transportation method
Own packing shed (pack own fruit and others) – Length of time precooled prior to transportation (min)
Own packing shed (pack own fruit and others) – Length of time precooled prior to transportation (max)
Own packing shed (pack own fruit and others) – Maintaining pallet integrity method
Own packing shed (pack own fruit and others) – No. of growers packed for
Own packing shed (pack own fruit and others) – Packing charges
Own packing shed (pack own fruit and others) – Packing equipment

Qualitative Report Title
Own packing shed (pack own fruit and others) – Precooling of bananas after packing
Own packing shed (pack own fruit and others) – Services including in packing charges
Own packing shed (pack own fruit and others) – Temperature monitored prior to dispatch
Own packing shed (pack own fruit and others) – Transportation cost discussion
Own packing shed (pack own fruit and others) – Why provide contract packing services?
Packing - Contract
Contract packers – Location of packer
Contract packers – Packing charges
Contract packers – Packout advice and communication system
Contract packers – Packout advice and calculation mechanism
Contract packers – Services including packing charges
Contract packers – Why this contract packing facility?
QA Assessment
Comments on QA methodology
Describe product traceability system
Marketing & Marketing Skills
Discussion on marketing skills training
Discussion on the person undertaking the marketing role
How often do you speak with your principal marketer?
How often do you visit your principal marketer?
Marketing – Confirmation of returns (customer 1)
Marketing – Confirmation of returns (customer 2)
Marketing – Consignment advices to customer (1)
Marketing – Consignment advices to customer (2)
Discussion on customer breakdown and location
Marketing discussion – general
Payment advice to customer (1)
Payment advice to customer (2)
Payment terms (customer 1) from date of supply
Payment terms (customer 2) from date of supply
Sales method (customer 1) (or transaction type basis)
Sales method (customer 2) (or transaction type basis)
Sales method principal customer (1)
Sales method principal customer (2)