

# **Horticulture Innovation Australia**

## **Final Report**

### **Banana industry extension and R&D management**

Jim Pekin  
Australian Banana Growers Council Inc

Project Number: BA11027

**BA11027**

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Fax: (02) 8295 2399

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# Keywords

Banana; R&D management; industry development;

## Summary

In July 2012, Dr Jay Anderson was appointed as the R&D Manager for the banana industry under the BA11027 Banana Industry Extension and R&D Management project. That project had three main roles: Project Coordination - to assist the then Horticulture Australia Limited (HAL) and its Banana Industry Advisory Committee (IAC) with information on projects; Project Development - to assist with the development of projects from the ground up and to facilitate project development which had stalled due to a lack of resources; and thirdly Technical Advice – to provide HAL, the IAC, and the industry with technical advice on a range of areas, particularly pest and disease issues and to build on established networks and create new ones to share information on projects and opportunities for research within the industry.

Projects which were progressed included; a National Extension Project, an Integrated Production and Market Information Systems project, a number of projects on environmental and water quality issues and projects in the high priority area of biosecurity. The Capacity Building in Bananas project was developed. This project resulted in two study tours, one on biosecurity to China and the Philippines and one mostly on biosecurity and fruit quality to Central America. Growers networked and shared their learnings on their return through presentations at meetings and through a written report.

The R&D Manager also used her networks and her training as a Plant Pathologist to help source and provide technical information. Support was provided on agrichemical issues, technical and industry information was provided to state government biosecurity agencies for the review and development of regulations, and into the development of emergency plant pest (EPP) response plans.

Information was shared with growers by attendance and presentations at grower meetings, presentations at the extension roadshows, by contributing written articles, emails and by in person and on the phone communication.

A significant portion of the R&D Manager's time was spent in sourcing and providing technical advice on EPPs - during the Banana Freckle incursion in the Northern Territory in 2013 and 2014 and the Panama Tropical Race 4 (TR4) incursion in North Queensland in 2015. TR4 had been present in the Northern Territory since 1997 but the incursion in North Queensland has significantly sharpened the focus on TR4 as more than 90% of the industry is located in North Queensland.

At the conclusion of this project the highest priority of the banana industry is biosecurity, especially focusing on TR4. It is also the highest priority for Horticulture Innovation Australia (HIA, as the company that replaced HAL) in regard to its banana R&D investment. In order to address the needs of growers as they learn to cope with a changed operating environment it is recommended that the industry and HIA support the implementation of a clean planting material scheme. In the current project the R&D Manager progressed projects and created linkages between growers, researchers, government and other industry stakeholders to facilitate best value for industry out of projects. A new project with similar aims but focusing on TR4 will be of benefit to the banana industry.

## Introduction

In 2012 when this project was planned the Australian banana industry was worth in excess of \$400 million (farm gate). The industry was making a significant investment in its future with levy payers contributing close to \$2 million per year towards R&D via HAL, which then matched these levy funds with Commonwealth funds so as to provide nearly \$4 million per year to support the industry's development, sustainability and longevity. A strategic plan had been developed and key projects identified but the implementation of these key R&D priorities had slowed due to a lack of resources to capably manage the large R&D portfolio within the industry and drive projects to implementation. On the recommendation of the Banana IAC, HAL directed the industry peak body (Australian Banana Growers' Council, ABGC) to progress this project with a dedicated position to accelerate the development and implementation of key R&D projects and priorities for the industry and to provide technical advice to industry and HAL.

### Primary Roles of the R&D Manager

- Project development and implementation – developing and implementing priority R&D projects in line with the Banana Strategic Investment Plan and as recommended by the IAC. Projects to be addressed included:
  - An Extension project (implementing the recommendations from BA10011 completed in August 2011 regarding extension capacity within the industry);
  - An Integrated Production and Market Information System (implementing the recommendations from BA10021 and the August 2011 IAC agreement to fund a 'human resource to better manage and integrate production and market data on an ongoing basis');
  - An Environmental Management project (implementing the Environmental Management Strategy developed in 2009, and recommendations from BA09063 from 2010)
- Future project development – the R&D Manager was also tasked with developing future project briefs and outlining the desired outcomes from them.
- Project management – providing management of selected R&D projects, such as the Banana Bunchy Top Virus project which was then contracted to ABGC.
- Project coordination – staying abreast of project progress, project modifications and providing an ABGC contact point for project leaders.
- Reporting, extension and relationships management – reporting to the IAC on project progress, key issues and project development opportunities, and ensuring the IAC is provided with the necessary information in a timely and efficient manner to help HAL (and later, HIA) make investment decisions.
- Providing technical advice.

## Methodology

A selection panel for the R&D Manager role was convened consisting of Mr Jim Pekin (ABGC CEO), Ms Jane Wightman (Banana Industry Services Manager, Horticulture Australia Limited, HAL,) and Mr Stewart Lindsay (Senior Development Horticulturist, banana representative on the National Horticulture Research Network, Department of Agriculture, Fisheries and Forestry Queensland, DAFFQ). A role description and selection criteria were developed and the role was advertised through Seek.com as well as being distributed through professional networks. After assessment of written applications and in person interviews Dr Jay Anderson was appointed as R&D Manager in July 2012.

To guide the role a project reference committee (PRC) was established consisting of Mr Jim Pekin, Dr Alison Anderson (Portfolio Manager – Industry Development, HAL), Mr Adrian Crema (IAC's Scientific sub-committee member and Tully banana grower) and Mr Stewart Lindsay. The group met face-to-face for the first meeting on the 16<sup>th</sup> October 2012. Through the course of the project draft twelve-month work plans and detailed six-month work plans were developed by Mr Pekin and Dr Anderson and reviewed by the PRC. The PRC met on an as needs basis via teleconference with materials for discussion distributed prior to the teleconferences. Progress was reported to HAL via 6-monthly milestone reports. The incursions of Banana Freckle in the Northern Territory and Panama Tropical Race 4 in North Queensland meant significant changes from planned work for the R&D Manager as they become the biggest issues for the banana industry when they occurred.

A mid-term review was conducted by the PRC in March 2014 with direction from Dr David Low from HAL who had replaced Dr Alison Anderson on the PRC while she was on secondment. The PRC undertook review of the role, a SWOT analysis and planned for the next 15 months of the role.

To manage the role and report on it, Dr Anderson broke the project into 4 areas:

- Project development
- Technical support for industry
- Project reporting, extension and relationships
- Professional development.

To assist with delivering on project objectives Dr Anderson developed an extensive network which included; the Banana IAC, banana researchers and extension officers in North Queensland, South East Queensland, NSW Department of Primary Industries, Northern Territory Department of Primary Industries and Western Australia Department of Agriculture, key consultants to the banana industry, and as well as banana growers in NQ, NSW and WA, with the largest number of growers being in NQ to reflect the concentration of the industry there. Leadership, industry linkage and office support was provided by ABGC.

Information was shared via: telephone and email correspondence; attendance at workshops, field days, formal and informal meetings; a study tour; contribution to articles on 'Australian Bananas' magazine, the e-bulletin and 'Banana Newsletter'; participation in project reference group meetings and one-on-one meetings.

# Outputs

Outputs are listed under each of the four areas of the project:

## Project development

As directed in the role description, the R&D Manager initially facilitated the development of projects in three priority areas:

1. **Extension project** – The HAL ISM and the R&D Manager developed a brief for the project based on an industry development needs assessment, the 3 year project was contracted to DAFFQ in September 2013 as BA13004 National Banana Development and Extension Project.
2. **Integrated Production and Market Information System** – A two stage process was endorsed by the IAC and HAL awarded a stage one contract in October 2013 (BA12016 – Banana production and marketing information system).
3. **Environmental Management** – A number of projects have been progressed in this area:
  - A project was developed and funded by Terrain NRM to engage with growers on water quality grants and deliver extension and training in those areas. This project was contracted in October 2013 and runs until mid-2016.
  - Facilitated the participation of the banana industry in the 'The Fruit Salad project' being run by Dr Justine Cox, NSW Department of Primary Industries, with a Carbon Farming Futures Action on the Ground grant. The project examines the effect of the application soil; amendments on emissions from horticultural soils for banana, melons and blueberry. The project was contracted in 2013 and will run until 2017.
  - The R&D Manager developed a Department for Environment and Heritage Protection Queensland project on the development of an app and extension and training program to assist with a gap in data collection identified by the National Extension Project team members. The project was contracted in June 2015 and will run until July 2017.

Other priorities from the industry strategic plan were also advanced:

- The R&D Manager facilitated the banana industry involvement in an Australian Centre for International Agricultural Research (ACIAR) scoping study and project on Panama Tropical Race 4 (TR4) in the Philippines led by DAFFQ and contracted in mid-2013. The R&D Manager and a NQ banana grower were part of the project team.
- The development by the R&D Manager of a HAL-funded Banana Capacity Building project.
- The R&D Manager pulled together a group of growers and researchers to discuss the development of Stage 3 of the National Banana Bunchy Top Virus (BBTV) project in light of the review of the project and anticipated issues. The information pulled together was used to inform the EOI process run by HIA for tender of Stage 3 of the project.

## Technical support

- The R&D Manager provided a significant level of technical support to the banana industry on the Banana Freckle incursion in the Northern Territory in 2013. With training as a Plant Pathologist, the R&D Manager was able to: review the proposed Response Plans, provide industry information on practices and economics of growing bananas which assisted with development of the Response Plan, worked with Dr Juliane Henderson on the ground in the NT to develop a method to determine if ascospores were being produced in the field (significant for the way in which the disease would be managed), informed researchers on HAL and non-HAL funded projects the impacts of the Response Plan on their research in the NT, and presented to a meeting with Biosecurity NSW on the lifecycle of the disease to develop an area freedom surveillance plan.
- The R&D Manager also has provided a significant level of technical support (and also around improving outcomes in the reporting, extension and relationships area) to the Panama Tropical Race 4 incursion (TR4). The R&D Manager acted as the Industry Liaison Officer (ILO) in the State Coordination Centre (SCC) for the first 10 weeks of the incursion which included participating in daily situation report teleconferences. The R&D Manager provided feedback to Biosecurity Queensland on the development of Standards and Guidelines for properties infested with TR4. The R&D Manager also fielded calls to the ABGC offices from people ringing with offers of solutions to TR4.
- Development of a new Quality Banana Accredited Nursery (QBAN) system. The existing Nursery and Garden Industry Australia (NGIA) BioSecure HACCP has been identified as the best means of providing a clean planting material scheme for the industry. The QBAN guidelines have been mapped against the BioSecure HACCP and where gaps have been identified a draft 'Entry Conditions Compliance Procedure' specific for bananas has been developed by the R&D Manager. The implementation of a new scheme will require some consultation with nurseries and growers and also some assistance in the implementation of the scheme. The implementation is also related to the development of new Biosecurity regulations by the Queensland Government which is currently occurring. The R&D Manager has spoken with both Biosecurity Queensland (BQ) and Biosecurity NSW on plans for the scheme.
- The R&D Manager worked with BQ and Agriscience Queensland scientists on input into the technical side of the new Queensland Biosecurity regulations.
- The R&D Manager attended each of the Roadshows organised by the National Extension Project. The R&D Manager spoke on minor use permits and registrations at all roadshows (Tweed, Coffs, Carnarvon, Tully, Innisfail and Atherton), and on on-farm biosecurity at the Tweed, Coffs and Carnarvon roadshows.
- The R&D Manager participated in Plant Health Australia activities including reviewing PLANTPLAN and job cards, participating in the review of the Torres Strait Fruit Fly program and attending industry and Deed signatories meetings.
- The R&D Manager reviewed the final Strategic Agrochemical Review Process (SARP) that was completed by HAL. The R&D Manager tabulated the minor chemical use requirements and worked with the HAL Minor Use portfolio manager to report to the IAC so that research required to maintain access to minor use products was undertaken (e.g. residue data for mancozeb as a bunch dust). The R&D Manager also provided feedback on the fenamiphos (Nemacur) review to the APVMA.



- The R&D Manager provided information to Dr Ceri Pearce from BQ for the development of a black Sigatoka contingency plan for Torres Strait. This included organising a meeting with growers who had experience with the 2001 black Sigatoka incursion in Tully.

### **Project reporting, extension and relationships**

Project reporting, extension and relationship development was undertaken by the R&D Manager through:

- Drafting and contributing magazine, e-bulletin and newsletter articles, including articles on the study tour to China and the Philippines, what work the various biosecurity agencies are doing in Australia, the importance of care when using chemicals following a Four Corners program on 2, 4-D.
- Writing annual reports for HAL on the ABGC held projects relating to Banana Industry Extension and R&D Management, Yellow Sigatoka and other Banana Diseases and Banana Bunchy Top Virus.
- Participation in Banana IAC meetings, as ex-officio, to provide technical advice and to inform the IAC about non-HAL project developments each November and February for the life of the project until October 2014.
- Attendance at Local Banana Growers' Association (BGA) meetings to talk on banana R&D projects, the latest relevant developments, and to answer questions:
  - o Coffs Harbour BGA – 5<sup>th</sup> November 2014
  - o Nambucca BGA – 4<sup>th</sup> November 2014
  - o Tweed Brunswick BGA 14<sup>th</sup> May 2014
  - o Cassowary Coast BGA – 8<sup>th</sup> May 2014
  - o Mareeba BGC – 9<sup>th</sup> April 2014
  - o Cassowary Coast BGA – 10<sup>th</sup> April 2014
  - o Tweed Brunswick BGA – 19<sup>th</sup> February 2014
  - o Cassowary Coast BGA – 10<sup>th</sup> October 2013
  - o Mareeba BGA – 9<sup>th</sup> October 2013
  - o Cassowary Coast BGA – 13<sup>th</sup> June 2013
  - o Mareeba BGA – 12<sup>th</sup> June 2013
  - o Tweed Brunswick BGA – 7<sup>th</sup> February 2013
  - o Cassowary Coast BGA – 8<sup>th</sup> November 2012
  - o Coffs Harbour BGA meeting 16<sup>th</sup> August 2012
  - o Tweed Brunswick BGA – 15<sup>th</sup> August 2012.
- Either writing or collating final and milestone reports for ABGC projects:
  - o BA12007 – Integrated Management of Yellow Sigatoka and other Banana Diseases– milestone reports 1.2.15, 1.8.14, 1.2.14, 1.8.13, 1.2.13, 17.9.12.
  - o BA09055 – Yellow Sigatoka Surveillance – final report 30 July, 2012
  - o BA12006 – National Banana Bunchy Top project – milestone reports 1.2.15, 1.8.14, 1.2.14, 1.8.13, 1.2.13, 17.9.12.
  - o BA12703 – Capacity Building in Bananas final report 1.11.14, milestone reports 1.7.14, 30.11.13, 31.8.13, 21.6.13
  - o BA11027 –Banana Industry Extension and R&D Management– milestone reports 1.3.15, 1.9.14, 1.3.14, 1.9.13, 1.3.13, 1.10.12.
- Participation in Banana Agribusiness Managers (BAGMAN) meetings run in NQ by DAFFQ – 10<sup>th</sup> October 2013, 13<sup>th</sup> June 2013 and 16<sup>th</sup> October 2014.

- Participated in the planning committees for the 2013 and 2015 Banana Industry Congresses. In 2013 the R&D Manager chaired one of the Biosecurity sessions and designed an electronic survey to examine the effectiveness of the session.
- Participated in project reference committees for: the Banana Plant Protection Program, the National Extension project, the National Banana Bunchy Top project, the Integrated Production and Market Information systems project, the Fruit Salad Project and the NSW Industry Development officer project. This included participation in project meetings, review of reports and providing feedback on draft terms of reference for external review of projects.
- Worked with CSIRO on a couple of projects aimed at the human sciences and biosecurity planning. For one the R&D Manager assisted the researchers to contact farmers to interview and for another the R&D Manager undertook a telephone interview and a one day workshop. The projects are aimed to improve the use of local knowledge of rural and remote communities in response to exotic pest incursions.
- Assisted the project leader under taking the strategic investment planning process in 2013/2014 with contacting growers, wholesalers and other key industry staff. Participated in workshops for the process and provided feedback on the draft document.
- Reported at quarterly ABGC Board meetings.

### **Professional development**

Professional development was less of a focus for the R&D Manager but the project did provide some good opportunities for professional development:

- Participation at HAL Industry development Forums. The R&D Manager participated in the HAL Industry development forum in August 2012 and was part of the organising committee for the August 2014 forum. She also chaired a session on 'Capacity Building Case Studies' at the 2014 forum.
- Attendance at the International Horticultural Congress in Brisbane in August 2014 and PMA Conference in Auckland in June 2014.
- The R&D Manager participated in an ACIAR workshop for project leaders in February 2015 as a member of a panel discussion providing an industry perspective on what has worked and not worked well in past research projects.
- Completion of on-line professional development course run by HAL for the Next Generation Program in December 2012
- Speaking to Primary Industry Centre for Science Education co-ordinators in October 2013 on banana research. Also presented talks to students on careers in agriculture at the UQ Sunflower Day in Gatton May 2013 and UQ's FEAST July 2013.

## **Project mid-term review and project progress**

The mid-term review was undertaken via teleconference on 14<sup>th</sup> March 2014. In attendance were: Stewart Lindsay (DAFFQ), Adrian Crema (banana grower), Jim Pekin (CEO ABGC), David Low (HAL) and Jay Anderson (ABGC R&D Manager). Jim Pekin presented a review of the planned deliverables and a summary of the R&D Manager's activities and achievements since the commencement of the project. The group then went through draft S.W.O.T. analysis (attached in Appendix 1) and planned program which Jay Anderson had previously sent out. Any major changes to the project which were required due to the Banana Freckle incursion had already been incorporated into the workplan and the project reference committee was satisfied with the progress of the project.

After the mid-term review the project was tracking as planned however in March 2015 Panama Tropical Race 4 (TR4) was detected in North Queensland. Nearly all effort of the R&D Manager went to dealing with the TR4 incursion and the planned activities for the last four months on the project were superseded by activities to support the TR4 response. Planned activities on QBAN and industry biosecurity planning were progressed as best as possible.

## **Outcomes**

### **Project development**

Projects in key areas were contracted and research and extension was undertaken in areas required by the industry. Growers became more informed of the R&D outcomes and biosecurity messages through the National Extension project, especially the major activity of the project, the Roadshows.

Stage one of the Market and Production Information Systems was completed but a stage two was not contracted. This was due to issues with getting a larger number of growers involved, data privacy issues and also due to funding uncertainty created at the time by the review of HAL.

Through the Terrain NRM project, more growers in North Queensland have access to the grants program to help them implement farm practices and works to improve water quality leaving their farms. The delivery of extension and training is strongly linked with the Banana BMP developed as part of HAL funded project BA11006 meaning that the Banana BMP is still being actively used after the completion of the project and growers are getting a consistent message on environmental best practice across the industry.

Whilst it has only just been contracted the Department of Environment and Heritage Protection project will also provide this consistent message on environmental best practice and will also address a need to be able to record on-farm inputs in on a mobile device which has been identified by growers themselves. Due to the project being developed within ABGC there will be a focus to make sure the project meets the needs of growers and assist them to further implement the Banana BMP. The development of the application will also examine how it could be used to assist growers manage changes required due to the TR4 incursion in NQ (e.g. tracking planting material, prevention of soil spread is good for water quality and good to prevent movement of TR4).

Biosecurity was identified in both previous and current industry strategic investment plans as a key

need of the industry. The progression of a third phase of the BBTV project and the new ACIAR Tropical Race 4 project, along with projects which others have developed will address this key need. The outcome of the ACIAR Tropical Race 4 project is that research commenced on key questions prior to the detection of TR4 in NQ and better linkages between Australian and Filipino researchers and extension officers have been established. Stage 3 of the BBTV project is now contracted (as BA14011).

The development of the study tour project meant two study tours were undertaken, the first one to China and the Philippines looked at the issues of biosecurity and Tropical Race 4 and the second one looked at issues of fruit quality, environmental issues and biosecurity in Central America. Growers returned from the study tours with a better idea of these issues addressed on the tour and with better industry networks. Growers shared their experiences at local banana grower association meetings and by providing notes and photos for the final report. The R&D Manager reported back learnings to a BAGMAN meeting and to a group of researchers from UQ and DAFFQ meaning that similar messages on biosecurity were shared with growers and other industry stakeholders.

### **Technical support for industry**

Significant technical support was given to the responses to the Banana Freckle and TR4 incursions and the outcome of this was that there was a two way conduit of information between industry and government. In the case of the TR4 incursion the R&D Manager as the Industry Liaison Officer was able to either supply information, or find someone to supply information on industry practices to BQ when they were undertaking planning for the response. The R&D Manager also acted as a 'translator' between Biosecurity Queensland who have processes for responses, growers who want immediate action and researchers who only look at the response from a scientific point of view (not necessarily economic). The outcome of this was that for the most part, the processes at the planning level ran smoothly.

Other activities in the biosecurity area such as working with Plant Health Australia (PHA) and Biosecurity Queensland have meant that the banana industry has met its requirements as part of being signatories to the EPP Response Deed, the industry is better prepared to deal with future incursions and the banana industry was able to put forward an informed response in the Consultative Committee on Emergency Plant Pests (CCEPP) and National Management Group (NMG) meetings for the Banana Freckle, Cotton Red Spider Mite and Panama Tropical Race 4 incursions which occurred over the three years of the project.

While the significant drain on time of the responses to disease incursions meant that a new QBAN scheme was not implemented a new technical basis for the scheme was developed and a means for a clean planting material scheme was achieved through BioSecure HACCP. This means that once implemented growers will be able to better meet their biosecurity obligations through access to clean planting material.

### **Project reporting, extension and relationships**

Through the various reporting methods used by the R&D Manager (attendance at meetings, written articles, attendance at roadshows and so on) growers should be more aware of the research happening in Australia, where to find more information on chemicals and more aware of who to contact for more information on issues. The outcomes from the attendance at meetings and the

strong networks developed meant that the R&D Manager was aware of emerging issues within the banana industry and better positioned to find resources (people, project funding) to address those issues.

These networks and knowledge of emerging issues in the industry were called on when the R&D Manager sat on project reference committees to ensure the best project outcomes for industry and so that researchers and extension officers were aware of potential collaborations.

### **Professional development**

The outcome for the banana industry of the professional development undertaken by the R&D Manager was a better network to facilitate project development and also to provide support to the researchers and extension officers working on a banana projects. Participation at these events also raised the profile of the banana industry in terms of the R&D and Extension currently being undertaken by the industry. Attendance at large conferences also provided ideas for the 2015 Banana Industry Congress.

### **Project mid-term review**

Outcome for industry and the project team of the mid-term review was to know that the project was on the right track and addressing the major priorities. HAL was able to confirm that the project is providing good value for money and meeting its reporting requirements.

## **Evaluation and Discussion**

The main aim of developing projects from the ground-up was achieved with all of the projects identified for development at the start of the project being developed and two additional projects with an environmental focus developed.

All of the IAC meetings were attended with the R&D Manager working with the HIA ISM to make sure growers had their requests for additional information met. Through the networks of the R&D Manager, where there were opportunities to link researchers and projects to improve outcomes these were taken.

Technical advice was provided as needed and whilst the R&D Manager was not always able to provide the advice, due to their networks they were often able to find the right person to provide advice. The background of the R&D Manager as a Plant Pathologist in the current project was valuable due to the number of biosecurity issues.

A range of communication methods were used to provide information to growers to cater to different learning modes. The most often method used though was presentations at local grower meetings, roadshows and BAGMAN meetings.

Apart from a new QBAN scheme not being fully developed and the review of the industry biosecurity plan being put back due to the TR4 incursion, all of the aims of the project were met or altered with the permission of the PRC. At the mid-term review the PRC was extremely satisfied with the progress of the project and did not make any major changes to the focus of it. All milestone reports were approved by HIA.

## Learnings

As seems to be the case with all industry development projects there were always lots of competing interests for attention, especially as the R&D Manager was based within the main ABGC office. However the benefits of having the R&D Manager based with ABGC far out-weighed the negatives. Being based within ABGC, the R&D Manager was co-located with the Project Leader, who provided valuable industry context and advice, and with the HIA-funded Communications Manager and Strategy Manager which made collaborative work easier. The R&D Manager was able to provide technical advice on behalf of industry to the CCEPP meetings. Whilst it is not readily able to be measured, the R&D Manager being an ABGC employee meant growers had more confidence in dealings with the R&D Manager. A CRC for Plant Biosecurity project which looked at how local knowledge is used in plant biosecurity management in Northern Australia found that ABGC are a broker of knowledge trusted by growers (pers. comm. Kirsten Maclean, CSIRO, 2014).

A new replacement QBAN is not up and running. However, the response to the two incursions allowed very little time for this and it may be better to have the development of the clean planting material scheme as a separate project to ensure there are no competing interests for something which is of importance to the industry.

One of the projects which was the most difficult to progress was the Production and Market Information project. Whilst growers wanted a means of recording data electronically, they were wary of contributing data to a centralized database. Any future development of data recording systems will need to have a strong focus on security and ownership of data and assurances to growers about how data will be used.

## Recommendations

**Continuation of a R&D Manager role** – it is recommended to continue with a HIA funded role to provide a coordinated response to TR4 and to assist the industry with technical advice. Much of the value of the current project has been that the R&D Manager is the first point of contact and provided a link between different projects. It is also recommended that the role be based within ABGC as that provides the best possible linkage with growers and understanding of industry issues. It also provides growers more confidence in their dealings. It would not be necessary that the person have a Plant Pathology or Entomology background but rather that the person can build networks readily.

**Progression of a new QBAN scheme** - The development of a project to assist with the on-the ground development of a means of supplying clean planting material to meet the BioSecure HACCP standards and a resource to help nurseries and growers who want to produce clean planting material should be a priority. Planting material is the major means of spreading pests and diseases. It would potentially be best to be run as a stand-alone project so that it does not get lost in competing project demands.

**Ongoing review of agrichemical needs** – regular review of the SARP is recommended so that data requirements are recognised well ahead of when the data will be required.

## **Scientific Refereed Publications**

None to report.

## **Intellectual Property/Commercialisation**

No commercial IP generated.

## **Acknowledgements**

The R&D Manager acknowledges past IAC and Scientific sub-committee members, former HIA Industry Services Manager Jane Wightman, HIA Portfolio Managers in particular Ben Callaghan and Alison Anderson, and fellow project reference committee members for being excellent to work with. She also acknowledges all of the extension and R&D service providers for sharing information and for them working collaboratively to get the best outcomes for the banana industry.

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# Appendices

## Appendix 1. S.W.O.T. Analysis of BA11027: Banana Industry Extension and R&D Management

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Project sits within the peak industry body providing good links with growers and industry support people.</li> <li>• R &amp; D Manager has good links with service providers.</li> <li>• R &amp; D Manager has good links with other industry development officers</li> <li>• Good relationship with the HAL Banana Industry Services Manager and HAL portfolio managers.</li> <li>• R &amp; D Manager has a good knowledge of pest and diseases issues, many of the issues facing the banana industry are pest and disease related.</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Jay is stretched across many issues and there is a large diversity of issues being dealt with.</li> <li>• The project can be seen as a vehicle for everyone’s issues to be progressed, not just those listed as priorities by the industry.</li> <li>• Due to an exotic disease incursion, less time than anticipated has been spent on extension of industry projects.</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Opportunity to find funding sources outside of HAL funding to progress high priority issues for industry (e.g. Reef Rescue, Action on the Ground).</li> <li>• Linking in with the National Extension project and Industry Communications project to provide coordinated extension efforts.</li> <li>• Should a strategic industry development proposal be successful (due to be assessed by the IAC in a few weeks) then the R&amp;D Manager will be able to provide technical information to the strategy officer which will be developed into long-term strategies to benefit the industry.</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• A change in environment (such as an exotic disease incursion) can rapidly change the priorities of the project and divert time away from other activities.</li> <li>• Confusion by growers and external stakeholders regarding the role of the IAC and ABGC.</li> <li>• A cyclone – changing funding and priorities.</li> </ul>