# Industry Development Officer Network for the Nursery Industry

Robert Prince
Nursery & Garden Industry Australia (NGIA)

Project Number: NY09010

**NY09010**

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Level 7
179 Elizabeth Street
Sydney NSW 2000
Telephone: (02) 8295 2300
Fax: (02) 8295 2399



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## FINAL REPORT

**HAL Project: NY09010**
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Chief Executive Officer
Nursery and Garden Industry Australia

HAL Project: NY09010

# Industry Development Officer Network for the Nursery Industry

**Project Leader:** Robert Prince- NGIA

**Key Personnel:** Anthony Kachenko – NGIA
John McDonald – NGIQ
Michael Danelon – NGINA
Robert Chin – NGIV
David Reid - NGIV
Megan Connelly – NGINT
Grant Dalwood – NGISA
Garry Hatcher – NGIWA
Matthew Trent – NGIWA
Trevor Winter – NGIWA
Angela Monks - NGIT
Jennifer Nesini - NGIA

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# 1. Media Summary

The Nursery Industry Development Officer (IDO) Network was a key recommendation of the Industry Development Needs Assessment undertaken in 2008-9. The project has built on prior investment in industry extension activities, with improved reporting and monitoring of activities. The State Nursery & Garden Associations are subcontracted to Nursery & Garden Industry Australia (NGIA) to deliver industry development activities, which overcomes the issues of industry diversity and rationality.

The project has delivered key outcomes in the areas of industry accreditation and certification which has been independently analysed to show a return on investment of 40.5% and a benefit cost ratio of 8:1.

Over the period of the project the nursery industry has been under pressure from water restrictions, incursions by a Class 1 disease (Myrtle Rust) and ensuing market access controls for interstate sales, and the Global Financial Crisis which has seen consumer confidence and market expenditure on plants drop.

Industry has survived these pressures due to the inputs from the IDO Network and support services provided to back them up.

Through the project training was provided to over 4000 industry participants, the IDO Network were involved in over 800 audits, 1200 meetings were held on industry critical issues and there were over 9000 engagements with industry stakeholders.

Project evaluation has shown that the IDO Network provides great benefit to the industry and is viewed by industry as one of the most important areas for Research and Development investment. It is recommended that the nursery industry continue to fund the Industry Development Officer Network. An independent review of the IDO Network has provided guidance to the industry to improve future industry development projects.

# 2. Introduction

The Nursery Industry has had an Industry Development Officer (IDO) Network in place for over 12 years (funded through HAL projects). Each project has built on the previous project with regards to the level of activity undertaken and also the reporting of quantifiable benefits to both the industry and wider community.

The Industry Development Needs Assessment (IDNA) undertaken as this project was under development showed that while there was an effective Industry Development Officer Network in place, it could or should be improved by linking all Industry Development activities in a clear manner. This project has been focussed on implementing the key IDNA recommendations and also building the basis for the next stage of industry extension and technology transfer.

During the development of the Nursery and Garden Industry Strategic Investment Plan 2012 - 2017 it was identified by the consultation group the key benefits arising from this project and the Industry Development Officer Network. The future opportunities for improving the IDO Network were also identified and these have been incorporated into the new IDO Network project (HAL project NY12006) which flows on from this project.

# 3. Method and Activities

The Industry Development Officers (IDO's) are located in the Nursery and Garden State Association Offices and are managed at State level via subcontracts with NGIA. The subcontracts reflected the contract between HAL and NGIA for the delivery of the project. The project was focussed on outcomes rather than people, and the reporting process linked deliverable activities with remuneration.

The reporting process that was developed required State Associations to report quarterly, and NGIA combined reports into 6 monthly milestone reports. Quarterly reporting was requested by the States to ensure that any issues on delivery of outcomes could be managed effectively.

The States agreed on the funding split for this project, which saw the allocation of more funds to the larger states, Queensland, New South Wales and Victoria on the basis of numbers of businesses and issues compared to the smaller states. This caused some problems with the ability to resource the required activities but through the project greater collaboration between States to utilise the skills of IDO's from other states to undertake Audits and Training has been observed.

The key activities of the IDO Network in this project were:

- **Accreditation and Certification:** The IDO's manage the industry accreditation and certification program which is promoted under the banner of the Nursery Production Farm Management System (FMS) and this was a key activity of this project. The Nursery Production FMS is aimed at guiding change and technology adoption and includes three key programs: Nursery Industry Accreditation Scheme Australia (NIASA), EcoHort and BioSecure HACCP. These modules require IDO's to provide input to growers on business improvement and risk management. The IDO's undertake annual audits for participating businesses, which are managed via a web portal which has been developed during the period of this project.

- **Training:** The IDO's facilitate and often deliver technical training to growers. Training is delivered through workshops and field days or aligned with annual conferences. This aspect was a key part of technology transfer in this project. Industry has a range of industry specific training modules that have been developed.
- **Industry Communications:** As the "onground" resource for industry technology transfer the IDO network are critical to ensure industry communications are delivered to levy payers and stakeholders. In this project the IDO's contributed with technical articles in the regional and industry magazines. They were also expected to write a Nursery Paper (industry fact sheets) on an annual basis relating to topics they had expertise in or an affinity for, as well as deliver sessions at industry conferences.
- **Industry Stakeholder Engagement:** The basing of the IDO's at State Association offices has enabled them to be engaged with growers at a state level. This is seen as important for the industry as the nursery industry is so diverse and variations in growing conditions and plant types occurs throughout the country. The reporting format has enabled industry to be kept aware of State issues relating to water, biosecurity, market access, and state variations in legislation. The IDO network has been able to communicate these key issues to all levels of the supply chain within the industry.
- **Emergency Response Issues:** The IDO network is the basis of the industry capacity under the Plant Plan for the Emergency Plant Pest Response Deed. Over the period of this project the Nursery Industry has been involved with several incursions which have put extra strain on resources and the ability of IDO's to undertake all aspects of their role. When incursions occurred it was determined that biosecurity activities should be the priority for the IDO's. The network is also the contact point for issues regarding to water restrictions.

# 4. Evaluation

The following table details the key activities undertaken, outcomes and industry/community benefits. A national summary of activities is provided in Appendix 1.

| Activity | Outcome | Industry & Community benefits |
|---|---|---|
| **Accreditation and Certification:** | Over the 3 years of this project Accredited businesses increased from 255 to 276 then dropped back to 257. This drop reflects the difficult trading faced by industry after several years of drought and water restrictions and the resulting loss of confidence in the retail sector.<br>There were 884 audits conducted for NIASA accreditation. The environmental program EcoHort grew from 89 to 103 with over 418 audits conducted.<br>The newest module BioSecure | An independent analysis (AgEconPlus Consulting, 2012) of the FMS program has shown that the return on investment is as follows:<br>*Quantification of industry benefits from total investment is dependent on the number of adopting businesses and the number of these businesses that receive a financial benefit. The analysis has been completed using the assumption that around half of those who adopt the FMS receive a financial benefit. On this basis the FMS has delivered a strong return for industry – net present value of $71.22 million with a benefit cost ratio of 8.01 and a return on investment of 40.5%.*<br>Community benefits were also analysed |

| | | |
|---|---|---|
| | HACCP has grown from 0 to 43 business engaged and 4 accredited. | as follows:<br>*Benefits to the Australian community from the nursery industry's investment in the Nursery Production FMS were identified and analysed across the environmental, social and economic 'triple bottom line'. The most important environmental benefits realised by the Australian community were improved biosecurity (less chance of invasive weeds, pests and diseases) and improved chemical management. Community social benefits included increased demand for gardening with associated positive spin offs for health, social and visual amenity. Community economic benefits included employment and regional development.*<br>The full report is included in Appendix 2. |
| **Issues Management for the Industry** | Over the period of this project there were 5 major issues that the IDO network was engaged with at both a State and National level;<br>Meetings<br>Water 476<br>Environment 365<br>Invasive Plants 321<br>Biosecurity – Planning 494<br>Sustainability – Climate 274<br><br>Total 1,930 | The engagement of industry expertise in over 1,900 meetings ensured that the industry position and best practice information has been conveyed for the benefit of both industry and the community. The high number of meetings re Biosecurity reflects the issues with incursions such as Myrtle Rust and the impacts on trade and plant movements. The industry has also invested in projects covering these 5 key areas, so communication of research outcomes has meant the industry is more able to handle key issues. |
| **Communications** | The communication of key outcomes from industry investment in research and improvement programs was a key component of the extension activities undertaken within this project. The network has produced the following:<br><br>Articles for Hort publications = 110<br>Articles for Regional publications = 286<br>Nursery Papers = 16 - covering | Industry has been kept up to date by articles on key aspects of nursery production being made available via State and Regional magazines or commercial publications. This means that a wider audience has been exposed to issues such as effective water management, how to deal with biosecurity incursions and industry best practice. The industry Nursery Papers are widely distributed via Hort Journal so the wider community has the opportunity to understand the issues facing the complex industry. The Industry Action Plan for Myrtle Rust |

| | | |
|---|---|---|
| | such issues as follows:<br>Minor Use Chemicals for NGI;<br>Fungicide Resistance;<br>Pests of Production Nurseries and IPM;<br>Herbicides and leaching into nursery water;<br><br>The full list of nursery papers can be found under Publications on the NGIA website. | Management was widely distributed via government and associated industry websites, assisting and involving consumers in the management of this new disease. |
| **Technical Training:** | The delivery of industry specific training is critical to the long term adoption of outcomes from research or process development. The IDO network was involved in identifying needs, facilitating training and actually delivering workshops to growers and stakeholders. Over the period of the project there were 147 technical training events conducted, of which 120 were delivered by members of the IDO network. Attendance at these events numbered over 4000 industry stakeholders. Industry training programs can be found at the NGIA website and cover such issues as Pest and Disease, Supply Chain efficiencies; Costing for Profit; Growing Media 1& 2 as well as programs relating to EcoHort and BiosecureHACCP | As the nursery industry is diverse in business type and products produced there needs to be continuous training to ensure businesses are not slipping behind as technologies change. The need for ongoing awareness of key issues such as Biosecurity awareness and how it impacts on market access is critical. Growers all benefit from training and at times the economic climate makes it difficult for them to release staff to be involved. A well educated and efficient production sector will mean that consumers and the community will have ongoing access to quality product from a sustainable sector. |
| **Industry Engagement** | The IDO network is seen by industry as one of the most critical investments of their levy. The IDO resource is available nationally and utilised in all sorts of manners from risk management, business improvement and assistance when things go wrong. The measurements show that over | The benefits to industry from the programs delivered by the IDO network have been largely unmeasured. This is a problem when trying to quantify the returns on investment. The growers admit that process improvement can take several months or years to be implemented and to have an impact. Having someone cajoling them and supporting a change of practice is |

| | | |
|---|---|---|
| | the contract period there were the following contacts with industry nationally:<br><br>Retail sector 1182<br>Member 737<br>Non Member 445<br>Production Sector 5801<br>Member 4481<br>Non Member 1320<br>Supply Chain issues 612<br>Levy program 2637 | important in driving change within an industry sector. The contacts and visits made by the IDO network show that they are active across all stakeholders to improve the industry. The fact that the industry has survived water crisis, disease incursions and an economic loss of confidence which has impacted on the sale and use of plants is a reflection of the support provided by the network. Industry has reviewed the structure of the program and this will be part of a new industry development project and continuous improvement program. |
| **Growth Factor** | The growth of the industry has focussed on Accreditation and the figures show 10% growth was achieved in the first 2 years of the project but this has been stalled or impacted by external factors that were not present in 2009. Resources were stretched due to dealing with Myrtle Rust incursion in 3 States and preparatory planning in other states. The loss of resources in two States WA and Victoria meant that extra pressure was applied to state staff to ensure outcomes were maintained while the IDO positions were re-filled. The industry has also sought to have wider engagement with other sectors of the green industry to drive growth in the sector in the future. | The nursery industry was a leader in the development of plans to combat water restrictions, disease incursions such as Myrtle Rust, Fire Ant and Impatiens Necrotic Spot Leaf Virus. These have all had an impact on the sector but industry is looking to the IDO network to play a role in communicating the benefits of green life in the urban environment. This will drive growth in the sector. The pressures on the IDO network to take on more activities is increasing which will be an issue for industry to address re future funding. |

As part of the project an independent review was undertaken in August 2012 to provide industry with possible alternatives to delivery of extension activities for the Nursery Sector. This review is included in the appendices (Appendix 3) together with the Business Case Analysis of the industry Accreditation program – Nursery Production FMS (Appendix 2). Both of these independent reviews show that the IDO network is a good investment for the industry.

Full copies of the quarterly project reports are held at the NGIA office. These are large reports with supporting material, meetings papers and other documents to support the activities delivered through the project

# 5. Implications to Industry

The Industry Development Officer Network is seen by growers as one of the most important areas of investment for their levy funds. As market conditions change it is important that the activities from investment in capacity building evolve. As State Government's continue to cut back their level of extension expertise it is critical that industry focuses on the key areas that will make a difference to industry productivity and sustainability. To ensure this occurs there needs to be greater reporting and feedback on the impacts of industry development activities undertaken. These need to be quantified so industry has confidence in continuing to promote this program as a benefit to industry stakeholders.

**Challenges:**

- Gaining quantifiable data on the benefits of investment in industry development. This is due to the time taken for changes to be implemented and effects to be seen.
- Engagement of staff with a wide range of skills to cover all aspects of a diverse industry.
- Meeting sudden pressures on the IDO network through issues such as incursions of new pests and diseases, water issues, market access issues due to variations in State legislation.
- Pressures on communicating outcomes of research as every business is different and the need for general outcomes to be interpreted and adapted for each business.
- Time and distance issues as industry is widely scattered throughout the States.

**Opportunities**

- Utilisation of technologies to facilitate audit and general reporting.
- Sharing of skills across the country.
- Professional development to ensure that IDO's have a common understanding of how issues can be dealt with.
- Establishment of regional focus groups that are facilitated by the IDO network, but put ownership for technology transfer back with growers.

# 6. Recommendations

Extension and knowledge transfer are critical aspects of industry investment and should be continued with appropriate checks and balances to ensure that benefits are real and quantifiable.

A new industry development project for the nursery industry (HAL project NY12006) has been developed to reflect and build on the outcomes of this project. A new reporting system including an Annual Operating Plan will clearly identify where investment should be made in resources to deliver the outcomes required.

A project reference committee will work with industry to ensure that key improvements are factored into the program for the future.

# 7. Appendices

The following documents support the overall investment in the IDO Network and the Nursery Production FMS managed by the IDO's, and outline the key activities undertaken.

- Appendix 1: National Summary of Activities by Quarter
- Appendix 2: Benefit Cost Analysis of the Nursery Production Farm Management System (AgEconPlus Consulting, 2012)
- Appendix 3: Review of the Nursery & Garden Industry Extension Network (Yellow House Consulting, 2012)

NY09010 Appendix 1: National Summary of Activities by Quarter

# State Association Quarterly Report NY09010
## National Summary

| | 1 Jul-30 Sep | 1 Oct - 31 Dec | 1 Jan - 31 Mar | 1 Apr - 30 Jun | 1 Jul-30 Sep | 1 Oct - 31 Dec | 1 Jan - 31 Mar | 1 Apr - 30 Jun | 1 Jul-30 Sep | 1 Oct - 31 Dec | 1 Jan - 31 Mar | 1 Apr - 30 Jun | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009-2010 | | | | 2010-2011 | | | | 2011-2012 | | | | |
| **Accreditation & Certification** | | | | | | | | | | | | | |
| **NIASA - Production & Growing Media Accreditation** | | | | | | | | | | | | | |
| # NIASA Businesses (start of quarter) | 255 | 266 | 273 | 270 | 270 | 269 | 269 | 272 | 276 | 268 | 264 | 259 | |
| # NIASA Businesses (end of quarter) | 267 | 273 | 270 | 270 | 269 | 269 | 272 | 276 | 268 | 264 | 259 | 257 | |
| Net increase/decrease | 12 | 7 | -3 | 0 | -1 | 0 | 3 | 4 | -8 | -4 | -5 | -2 | |
| Businesses engaged with NIASA not yet accredited | 200 | 198 | 195 | 199 | 189 | 195 | 174 | 170 | 182 | 188 | 188 | 196 | |
| Number of audits conducted (based on single audit per business/year) | 61 | 116 | 51 | 137 | 64 | 47 | 17 | 127 | 27 | 107 | 17 | 113 | 884 |
| Manuals Sold | 8 | 9 | 2 | 5 | 3 | 4 | 6 | 5 | 4 | 4 | 2 | 2 | 54 |
| Number of SNAC/TOG/NIASA Meetings - maximum 4 per annum-2xState 2xNational | 2 | 8 | 1 | 10 | 4 | 4 | 2 | 4 | 4 | 6 | 2 | 3 | 50 |
| **EcoHort Certification** | | | | | | | | | | | | | |
| # NIASA Businesses EcoHort Certified (start of quarter) | 89 | 95 | 95 | 99 | 99 | 102 | 101 | 101 | 102 | 105 | 105 | 102 | |
| # NIASA Businesses EcoHort Certified (end of quarter) | 94 | 95 | 99 | 97 | 102 | 101 | 101 | 103 | 105 | 108 | 103 | 103 | |
| Net increase/decrease | 5 | 4 | 4 | 2 | 3 | -1 | 0 | 2 | 3 | 3 | -2 | 1 | |
| Businesses engaged with EcoHort not yet certified but are NIASA | 57 | 45 | 50 | 55 | 49 | 51 | 55 | 53 | 50 | 50 | 51 | 33 | 33 |
| Businesses engaged with EcoHort not certifiable (i.e. not NIASA) | 176 | 170 | 165 | 166 | 160 | 167 | 178 | 164 | 164 | 162 | 161 | 27 | 161 |
| Number of certification audits conducted | 12 | 69 | 10 | 72 | 11 | 7 | 3 | 72 | 8 | 70 | 8 | 76 | 418 |
| Manuals Sold | 7 | 5 | 4 | 6 | 4 | 3 | 3 | 6 | 1 | 1 | 1 | 1 | 42 |
| **BioSecure HACCP Certification** | | | | | | | | | | | | | |
| # NIASA Businesses Biosecure HACCP Certified (start of quarter) | 0 | 3 | 3 | 3 | 0 | 1 | 1 | 2 | 3 | 3 | 3 | 4 | |
| # NIASA Businesses Biosecure HACCP Certified (end of quarter) | 0 | 3 | 3 | 3 | 0 | 1 | 2 | 3 | 3 | 3 | 4 | 4 | |
| Net increase/decrease | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | |
| Businesses engaged with BioSecure HACCP not yet certified by are NIASA | 13 | 20 | 19 | 17 | 19 | 42 | 43 | 42 | 42 | 35 | 32 | 20 | 20 |
| Businesses engaged with BioSecure HACCP not certifiable (i.e. not NIASA) | 3 | 5 | 5 | 5 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
| Number of certification audits | 0 | 0 | 2 | 0 | 3 | 2 | 2 | 2 | 0 | 5 | 3 | 4 | 23 |
| Manuals Sold | 4 | 2 | 0 | 4 | 0 | 3 | 4 | 2 | 0 | 0 | 1 | 0 | 20 |
| **Training & Recognition** - *paid in accordance with T & R Funding Guidelines* | | | | | | | | | | | | | |
| **Training** | | | | | | | | | | | | | |
| # of technical workshops conducted | 15 | 10 | 10 | 8 | 6 | 8 | 6 | 10 | 12 | 15 | 30 | 17 | *147* |
| # of technical workshops delivered | 37 | 0 | 4 | 3 | 6 | 7 | 4 | 3 | 7 | 10 | 29 | 10 | *120* |
| Total workshop attendance | 35 | 683 | 592 | 356 | 432 | 352 | 274 | 440 | 176 | 316 | 499 | 180 | *4335* |
| **National levy initiatives** | | | | | | | | | | | | | |
| **Environmental Extension and Representation- Govt /Local Agencies** | | | | | | | | | | | | | |
| Water issues | 25 | 57 | 70 | 38 | 48 | 56 | 65 | 33 | 22 | 24 | 23 | 15 | 476 |
| Environment - World Environment Day etc | 10 | 35 | 56 | 39 | 45 | 37 | 38 | 36 | 22 | 16 | 19 | 12 | 365 |
| Invasive plants- GMI | 21 | 55 | 48 | 33 | 22 | 49 | 29 | 19 | 13 | 10 | 12 | 10 | 321 |
| Biosecurity- Industry Planning | 18 | 0 | 24 | 24 | 34 | 84 | 79 | 69 | 42 | 63 | 32 | 25 | 494 |
| Sustainability - eg Climate Change | 12 | 5 | 55 | 34 | 41 | 33 | 21 | 20 | 22 | 9 | 12 | 10 | 274 |
| **Industry Engagement** - *paid in quarterly sum upon approval of reports* | | | | | | | | | | | | | |
| **IDO accessibility** | | | | | | | | | | | | | |
| IDO contact with engaged (member) retailer | 9 | 75 | 85 | 92 | 93 | 69 | 68 | 104 | 64 | 45 | 15 | 18 | 737 |
| IDO contact with non-engaged (non-member) retailer | 14 | 47 | 49 | 56 | 39 | 46 | 38 | 44 | 18 | 48 | 24 | 22 | 445 |
| IDO contact with engaged (member) production or growing media business | 91 | 379 | 554 | 457 | 447 | 331 | 425 | 566 | 388 | 376 | 211 | 256 | 4481 |
| IDO contact with non-engaged (non-member) production or growing media business | 14 | 124 | 183 | 136 | 162 | 91 | 134 | 117 | 77 | 103 | 100 | 79 | 1320 |
| IDO contact re Supply Chain improvements | 4 | 0 | 73 | 58 | 80 | 73 | 60 | 78 | 92 | 44 | 21 | 29 | 612 |
| IDO contact re levy programs | 75 | 0 | 157 | 149 | 203 | 261 | 213 | 527 | 390 | 297 | 190 | 175 | 2637 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # of technical articles written for horticultural media | 0 | 8 | 15 | 10 | 14 | 23 | 8 | 5 | 10 | 6 | 6 | 5 | 110 |
| # of technical articles written for state publications | 4 | 30 | 21 | 20 | 21 | 52 | 34 | 25 | 29 | 13 | 15 | 22 | 286 |
| # of technical Nursery Papers written | 1 | 2 | 2 | 3 | 1 | 0 | 1 | 2 | 1 | 0 | 2 | 1 | 16 |
| **DO - Regional Environmental/Technical Representation** | | | | | | | | | | | | | |
| # of meetings attended (max 12 per annum) | 3 | 45 | 25 | 36 | 34 | 28 | 45 | 30 | 140 | 34 | 22 | 10 | 452 |
| # conferences attended where industry represented- prior approval reqd. | 2 | 5 | 4 | 11 | 1 | 0 | 0 | 6 | 1 | 4 | 4 | 2 | 40 |
| State Conference | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 6 | 9 | 2 | 2 | 0 | 21 |
| National Conference & Exhibition | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 10 |
| Special Interest Group Facilitation | | | | | | | | | | | | | |
| **SIG** | | | | | | | | | | | | | |
| Production/Growing Media | 0 | 1 | 2 | 1 | 10 | 3 | 7 | 8 | 4 | 4 | 3 | 2 | 45 |

**NY09010** Appendix 2: Benefit Cost Analysis of the Nursery Production Farm Management System (AgEconPlus Consulting, 2012)

# Nursery Production Farm Management System – Benefit Cost Analysis


*Report- August 2012*


ABN 41 107 715 364
**Michael Clarke**
**Cathy Moore**
P: (02) 9817 5888
**E: clarke@AgEconPlus.com.au**
W: www.AgEconPlus.com.au

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## Abbreviations

| | |
|---|---|
| DAFF | Australian Government Department of Agriculture, Fisheries and Forestry |
| HACCP | Hazard Analysis and Critical Control Point |
| HAL | Horticulture Australia Limited |
| IDO | Industry Development Officer |
| IPM | Integrated Pest Management |
| KPI | Key Performance Indicator |
| NGIA | Nursery and Garden Industry Australia |
| NIASA | Nursery Industry Accreditation Scheme Australia |
| NIDO | Nursery Industry Development Officer |
| NPFMA | Nursery Production Farm Management System |
| OHS | Occupational Health and Safety |
| PC | Productivity Commission |
| R&D | Research and Development |
| RD&E | Research, Development and Extension |
| RDCs | Research and Development Corporations |

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- Grant Dalwood, South Australia Nursery Industry Development Officer
- Karen Brock, Brocklands Tasmania

Without whose assistance the cooperation of nursery industry businesses would not have been secured.

## Executive Summary

This document reports a series of cost benefit analyses on Nursery and Garden Industry Australia's (NGIA) Nursery Production Farm Management System (FMS). It was prepared to provide an evidence base for communication to industry and Horticulture Australia Limited.

Three benefit cost analyses were completed. The first addressed the value of the FMS to individual businesses. The second analysis quantified the FMS's value to the whole nursery industry while the third identified benefits to the broader Australian community.

Not all nursery businesses that invest in a FMS receive a financial return and many adopt the FMS for reasons that are not purely financial. Amongst those who did receive a financial gain from adoption, the return is substantial and reflected in new markets accessed, reduced stock wastage, management efficiencies, labour and chemical savings. Less easily quantified benefits include improved access to technology, risk reduction, brand building, staff culture, continuous improvement and ease of compliance with environmental regulations. Business costs include both capital expenses (up to $150,000 to retrofit an older nursery) and annual operating outlays of as much as $50,000 per annum. The formal benefit cost analysis showed a positive return on business investment with a five year payback period.

To deliver these benefits to individual businesses, NGIA and Horticulture Australia Limited (HAL) have supported twenty two levy funded projects totalling almost $1.3 million. Contributions have also been made by various state governments. Ongoing costs include annual administration and the Industry Development Officer (IDO) network.

Quantification of industry benefits from total investment is dependent on the number of adopting businesses and the number of these businesses that receive a financial benefit. The analysis has been completed using the assumption that around half of those who adopt the FMS receive a financial benefit. On this basis the FMS has delivered a strong return for industry – net present value of $71.22 million with a benefit cost ratio of 8.01 and a return on investment of 40.5%.

Sensitivity analysis completed on industry returns demonstrated that even with only 25% of adopters receiving a financial benefit from FMS implementation, additional industry revenue more than covered industry investment costs.

Benefits to the Australian community from the nursery industry's investment in the Nursery Production FMS were identified and analysed across the environmental, social and economic 'triple bottom line'. The most important environmental benefits realised by the Australian community were improved biosecurity (less chance of invasive weeds, pests and diseases) and improved chemical management. Community social benefits included increased demand for gardening with associated positive spin offs for health, social and visual amenity. Community economic benefits included employment and regional development.

# 1 Introduction

This document is a benefit cost analysis of the Nursery Production Farm Management System (FMS). It was prepared for Nursery and Garden Industry Australia (NGIA) by AgEconPlus between December 2011 and September 2012.

## 1.1 Analysis Purpose

The purpose of the benefit cost analysis was to provide an objective and independent evidence base for communication to industry. Completion of benefit cost analysis is also consistent with Horticulture Australia Limited (HAL) requirements.

## 1.2 Background

Farm Management Systems are a framework endorsed by industry and government to ensure a sustainable future for primary producers. The Nursery Production FMS is aimed at guiding change and technology adoption and includes three key on farm programs:

1. Nursery Industry Accreditation Scheme Australia (NIASA) – a Best Management Practice program to improve business efficiency whilst being mindful of the environment.
2. EcoHort – an Environmental Management System which offers risk assessment, a continuous improvement pathway and opportunity to demonstrate sound environmental stewardship.
3. BioSecure *HACCP* – a biosecurity program which helps business assess their pest, disease and weed risks for both imported and exported material.

Businesses must be NIASA accredited in order to be eligible for EcoHort and BioSecure *HACCP* certification. The Nursery Production FMS is relevant to production nurseries, growing media manufacturers and greenlife markets. The Nursery Production FMS has been adopted by 274 mainly production nursery businesses (Table 1.1). There are approximately 3,500 nursery production businesses in Australia (AgEconPlus and Agtrans Research 2009).

The Nursery Production FMS is supported by a formal recognition process, on farm technical and pathology support. An annual accreditation / certification charge is levied by State or Territory Associations based on NGIA membership for these support services (Table 1.1).

**Table 1.1 Number of Accredited/Certified Nursery Industry Businesses**

| Program | Number of Businesses | Cost per annum NGIA Member ($) | Cost per annum NGIA Non Member ($) |
|---|---|---|---|
| NIASA | 274 | 400 - 530 | 730 – 880 |
| EcoHort | 100 | 0 - 195 | 0 - 390 |
| BioSecure *HACCP* | 2 | 0 - 195 | 0 - 390 |

Source: NGIA September 2011

## 1.3 Study Approach

The benefit cost analysis was completed at three levels:

1. The first analysis addressed the value of Nursery Production FMS to an individual business that had implemented the system.
2. The second analysis quantified the farm management system's value to the whole nursery industry since inception.
3. The third analysis assessed benefits to the broader Australian community across the economic, social and environmental 'triple bottom line'.

The Nursery Production FMS was analysed as a 'whole' inclusive program rather than attempting separate evaluations for each of the NIASA, EcoHort and BioSecure *HACCP* programs. At this point in time it was deemed too difficult to separate out benefits associated with adoption of each Nursery Production FMS component.

The project was delivered using benefit cost analysis techniques described in the Council of Rural Research and Development Corporation (CRRDC) Evaluation Guidelines (updated 2009).

Data to inform the analysis was sourced from a survey of participating nursery industry businesses. A copy of the survey questionnaire is included as Appendix 1. Twenty seven complete data sets were collected from Nursery Production FMS accredited/certified businesses and these were aggregated into appropriate business types (see Table 1.2).

**Table 1.2 Nursery Industry Businesses Analysed**

| Business Type | Description | Data sets collected |
|---|---|---|
| Production nurseries | • Includes the seedling and potted colour sector; tree and shrub growers; propagation specialists; and indoor plant growers.<br>• Businesses identified with the assistance of NGIA Nursery IDOs. | 21 |
| Growing media manufacturers | • Includes manufacturers of growing media.<br>• Media manufacturers were identified through Compost Australia's media manufacturers list and with the assistance of NGIA. | 4 |
| Greenlife Markets | • Greenlife markets provide a plant wholesaling service to the industry.<br>• Only two greenlife markets have adopted NPFMS and this has only occurred since 2010. It was therefore necessary to complete the survey on the basis of actual costs and expected benefits. | 2 |
| | Total | 27 |

Surveys were completed as both face-to-face and telephone interviews. Telephone interviews were used to ensure the study was delivered cost effectively. More than fifty nursery businesses were contacted and those contacted were mostly enthusiastic about their participation in NPFMS. Time pressures associated with operating a nursery business prevented many of those contacted from participating in what was a comprehensive, and therefore time consuming, survey.

NGIA were keen to secure a mix of data sets across businesses operating in both tropical and temperate production environments. From the twenty seven data sets secured, seventeen were from businesses in southern Australia (NSW, Victoria, Tasmania and South Australia) and ten were located in Queensland.

A survey sample of twenty seven, ten per cent of those who have adopted an NPFMS is a reasonable sample size and provides confidence in the resulting analysis.

## 1.4 Review of Literature

Survey design was informed by the relevant NIASA literature. FreshLogic (2007) reviewed NIASA nursery growth, market share and perceived advantages and found:

- NIASA accredited businesses were more likely to be larger operations with substantial market share.
- Buyers of plants were aware of the NIASA program. Government sector buyers had a policy of purchasing from NIASA accredited nurseries, retail buyers were less committed. Buyers of propagation stock were reassured that NIASA reflected minimum quality standards.
- NIASA member feedback acknowledged that the scheme had provided valuable assistance in managing their nursery operations. The program provided 'another pair of eyes', but marketing upside was presently less apparent.
- NIASA member nurseries were performing ahead of the market.

Kachenko *et al* (2010) surveyed NIASA participants and concluded:

- Nursery production businesses became accredited to enhance their business reputation; to create a marketing advantage; to manage business risk; to access the Industry Development Officer (IDO) network; and to deliver on their environmental ethos.
- Most businesses recognised that NIASA accreditation satisfied their inter-state quarantine requirements.
- NIASA accreditation entitled businesses to a further discount on insurance with OAMPS.
- Business risk management and environmental responsibility were important drivers for the industry and are key components of the NIASA.
- Accredited businesses use NIASA within their marketing material which supports the ranking of business reputation as a reason for becoming accredited.

- More than 75% of businesses who are NIASA accredited would recommend accreditation to other businesses.

# 2 Value of NPFMS to an Individual Business

Aggregations of survey data for each of production nurseries, growing media manufacturers and greenlife markets are presented in this chapter. Costs and benefits are analysed and return on investment reported.

## 2.1 Production Nurseries

Surveyed production nurseries included tree / shrub producers, propagation specialists, tube stock growers, seedlings and potted colour nurseries. Enterprises tended to grow a mix of these product types.

### Production Nursery Costs

In most instances Nursery Production FMS participation resulted in at least some additional capital costs and always resulted in additional annual operating expenses. The average of these capital and operating costs across twenty one data sets is reported in Table 2.1.

**Table 2.1 NPFMS Capital and Operating Costs – Production Nursery Average**

| Cost Item | Average Cost per Business ($) | Comments |
|---|---|---|
| **Capital Costs** | | |
| Water treatment plant | 17,310 | Purchased by some nurseries regardless of Nursery Production FMS requirements |
| Steam steriliser for pots and tubes | 3,810 | Some purchased regardless of Nursery Production FMS |
| Drainage – pipes, gravel and bunds | 15,500 | Nil runoff required for EcoHort accreditation |
| Growing surface upgrades | 4,762 | Required by only three surveyed businesses |
| Storage facilities, conveyors, etc., | 4,510 | Typically storage for chemicals or soil |
| Systems development (e.g. Quality Assurance, Occupational Health and Safety) | 2,214 | Often to support Nursery Production FMS reporting |
| Integrated Pest Management development | 1,052 | Identified by only two survey respondent |
| **Total** | **49,158** | **(maximum of $150,000, minimum of zero)** |
| **Annual Operating Costs** | | |
| Accreditation costs | 510 | Program subscription to state association |
| Labour – administration | 1,502 | Incurred by most accredited/certified businesses |
| Labour – staff training | 736 | Some considered his a 'base case' cost |
| Labour – quality / safety checking | 887 | Required infrequently |
| Laboratory testing costs | 360 | Some nurseries have in-house testing |
| Nursery maintenance | 1,425 | Extra maintenance required post Nursery Production FMS |
| Sterilisation and water treatment | 1,600 | Incurred by most nurseries |
| Research & Development (R&D), continuous improvement | 2,880 | Major annual cost item for some nurseries |
| **Total** | **9,900** | **(maximum of $50,000, minimum of $465)** |

There was a wide variation in the cost of capital investment attributed to Nursery Production FMS by production nurseries. Some nurseries identify major capital items including water treatment plants, steam sterilisation facilities, nursery drainage, new growing surfaces and systems development while other surveyed nurseries claimed that these costs would have occurred regardless of accreditation. New production nurseries were less likely to incur capital costs as compared to established facilities attempting to 'retro-fit' to meet Nursery Production FMS requirements. Capital costs therefore vary from between $100,000 and $150,000 for those attributing major capital upgrades to no cost at all for those businesses that felt that Nursery Production FMS requirements were part of 'base case' good business practice.

Nursery Production FMS operating costs were similarly affected by the business manager's attitude to what constitutes 'base case' business practice. Annual operating costs attributable to the Nursery Production FMS ranged from as little as $465, the cost of nursery accreditation, to over $50,000 per annum for large operations which attributed significant R&D and continuous improvement investments (e.g. conveyors, OHS railings, concreted work surfaces and propagation equipment)to their FMS.

**Production Nursery Benefits**

Production nursery benefits from Nursery Production FMS were found to be of two types – those that are readily quantified, making a positive contribution to the financial performance of the business and those that are important but less tangible. The average of quantifiable Nursery Production FMS benefits along with a relevant explanation is summarised in Table 2.2.

**Table 2.2 Nursery Production FMS Financial Benefits – Production Nursery Average**

| Benefit Item | Average Benefit per Business ($) | Comments |
|---|---|---|
| Reduced insurance premiums | 182 | Insurance broker OAMPS had until recently offered a 10% premium reduction. This was discontinued following floods in 2011. |
| Reduced throw out rate - extra plant sales | 25,238 | Less poor quality plants produced and there is a ready market for additional saleable plants (e.g. throw out rates reduced from 5% to 3% with Nursery Production FMS). NB: throw out rate reductions not observed for tube stock. |
| New markets accessed - extra sales | 59,690 | Certification has facilitated increased sales via marketing advantage or enhanced reputation. New markets accessed have included interstate sales[#] and access to markets requiring plants that meet food safety standards e.g. fruit tree sales to commercial growers. |
| Management efficiencies | 12,429 | Includes access to innovation and business information provided by IDOs. Nursery Production FMS accreditation is also reported to be more cost effective than alternative systems. |
| Input savings - labour | 5,857 | Nursery Production FMS has led to the adoption of labour saving technologies e.g. pot cleaning equipment. |
| Input savings - chemicals | 1,571 | Includes savings on chemicals (e.g. fungicides) and fertilisers. |
| Input savings – electricity | 476 | Benefit only quantified by a few nurseries. |
| Input savings - water | 225 | Volumes saved can be significant one nursery saved up to a mega litre per annum of potable water. |
| **Total** | **105,668** | **(maximum of $702,000, minimum of $0[^])** |

# While NPFMS has in some instances facilitated interstate plant sales, the majority of Plant Health Certification is still completed by State or Territory Departments of Primary Industries
^ 7 of 21 interviews completed stated that there were no financial benefits associated with Nursery Production FMS accreditation

It is worthy of note that, on average, input labour savings, a benefit, were greater than additional labour costs, an expense. As with all Australian horticulture, reduction in expenditure on high cost labour is essential for long term industry profitability. Labour saving is an important 'selling point' for Nursery Production FMS adoption.

As with capital and operating costs there was considerable variation in quantified benefits. Large production nurseries that were supportive of Nursery Production FMS identified financial benefits to their business through additional sales and new markets. Other production nurseries were strongly of the opinion that the whole supply chain is driven by price alone and that there was no financial benefit from Nursery Production FMS participation. These owners and managers were Nursery Production FMS accredited/certified in order to realise a series of non-financial benefits.

Less easily quantified benefits of Nursery Production FMS participation identified by nursery production businesses included:

- Access to IDO which bring 'fresh eyes' and new knowledge to the production nursery business – financial, environmental, human resource and community management benefits were associated with IDO visits.
- Time savings associated with keeping up to date on innovation and changing legal requirements (e.g. OHS, human resources, insurance, chemical management, myrtle rust, etc.). 'Someone keeps across the issue for you then sends you information about what to do'. This non-financial benefit was also linked to the IDO network.
- Risk reduction – there is a lower probability of say a catastrophic production failure with the Nursery Production FMS in place (e.g. major pest or disease incursion such as myrtle rust within the business). While this benefit is certainly financial in nature, its quantum was difficult to estimate by production nursery businesses.
- Enhanced business reputation – additional confidence provided to existing customers and a point of differentiation when securing tendered contracts. Nursery Production FMS is all part of building the adopting business's brand. It demonstrates consistency, market positioning and credibility. It builds goodwill which will bring long term financial benefit to the business.
- Creation of a beneficial staff culture – Nursery Production FMS accreditation/certification helps bring about a professional and positive business outlook. Staff take pride in keeping up to the standard and management implement what they may have otherwise delay. Having an externally prescribed and audited system provides a discipline that ensures the team take training and required standards seriously.
- Continuous improvement within the business – the Nursery Production FMS encourages the questioning of the standard and current business practices, how can this be improved, what R&D is required and how can this proceed at a commercially appropriate rate. Improvements are prioritised over many years and implemented when they are affordable.
- A body of evidence demonstrating environmental best practice. This body of evidence assists with the management of some business's environmental ethos and is also useful in the event of disputes or to support business expansion plans. Production nurseries have found local government authorities to be much more sympathetic to businesses that can demonstrate sound environmental stewardship. EcoHort is often used by local government as a standard that must be met prior to building approval.

**Production Nursery Return on Investment**

A financial analysis of nursery production business Nursery Production FMS accreditation/certification was completed and is reported in Table 2.3. The impact on the business was analysed over ten years, to allow amortisation of capital, and a 5% interest rate was assumed.

Other data used to drive the analysis included:

- Capital costs associated with 'retro-fitting' a large established nursery business. Capital costs of $100,000 were assumed so as not to overestimate the financial benefit of Nursery Production FMS accreditation/certification. Capital costs modelled included a water treatment system ($20,000), a steam steriliser for pots and tubes ($20,000), improved growing surfaces ($10,000), a drainage upgrade ($40,000), miscellaneous capital ($5,000) and improved operating systems ($5,000). The cost of these capital items was amortised over a ten year period i.e. the annual additional cost of capital was $10,000 per annum.

- Additional annual operating costs were modelled on the average of survey responses and totalled $9,900 per annum. Major additional operating costs included labour ($3,125), investment in R&D and continuous improvement ($2,880), additional maintenance costs ($1,425), and sterilisation / water treatment expenses ($1,600). Program costs of $510 per annum were assumed and were a relatively minor expense item.

- No benefit was allocated for reduced insurance premiums as the OAMPS discount has been discontinued. Reduced plant stock throw out rates were assumed to start two years after commencement at $5,000 per annum and increase to $25,000 per annum within ten years of commencement.

- New markets and additional sales were the single largest benefit modelled. When fully realised, ten years after Nursery Production FMS implementation, the value of new sales achieved either interstate or in new local markets was assumed to be worth $45,000 per annum. Larger production nurseries that were Nursery Production FMS accredited/certified were able to demonstrate additional sales of more than $500,000 per annum. As previously noted, other businesses realised no additional sales as a result of the program.

- Other financial benefits associated with Nursery Production FMS accreditation/certification were assumed to include management efficiencies along with labour and other input savings.

**Table 2.3 Return on Investment – Production Nursery (over ten years, 5% interest rate)**

| Financial Indicator | Result |
|---|---|
| Gross revenue - average annual increase | $105,669 |
| Operating costs - average annual increase | $9,900 |
| Capital costs – average annual cost over ten years | $10,000 |
| Net revenue increase | $85,769 |
| Return on investment | 31% |
| Break-even on investment | 5 years |

Definitions:
Gross revenue: additional business receipts before allowance for associated costs
Operating cost: annual costs directly relevant to the generation of business revenue
Capital costs: business investments required to meet Nursery Production FMS requirements and secure additional revenue
Net revenue: gross revenue after allowance for operating costs and annualised capital costs
Return on investment: the yield generated from Nursery Production FMS
Break-even on investment: number of years required to recoup Nursery Production FMS related outlays

Return on investment and time to break even are, in AgEconPlus's experience commercially acceptable for Australian small to medium business enterprises.

## 2.2 Growing Media Manufacturers

### Growing Media Costs

Surveyed growing media manufacturers who adopted Nursery Production FMS incurred additional capital and operating costs – Table 2.4.

**Table 2.4 Nursery Production FMS Capital and Operating Costs – Growing Media Manufacturer Average**

| Cost Item | Average Cost per Business ($) | Comments |
|---|---|---|
| **Capital Costs** | | |
| Water treatment plant | 1,700 | Some form of upgrade required by three of four businesses surveyed |
| Steriliser equipment | 6,800 | Most considered this essential equipment |
| Drainage – pipes, gravel and bunds | 8,125 | To ensure no offsite impacts |
| Production surface upgrades | 14,825 | To ensure no offsite impacts |
| Storage facilities, conveyors, etc., | 375 | Minor cost for all businesses surveyed |
| Systems development (e.g. QA, OHS) | 5,950 | Includes electronic and paper systems |
| **Total** | **37,775** | **(maximum of $101,000, minimum of $2,000)** |
| **Annual Operating Costs** | | |
| Accreditation costs | 490 | Cost is similar to production nurseries |
| Labour – administration | 1,250 | Additional cost for only two businesses |
| Labour – staff training | 750 | Additional cost for only two businesses |
| Labour – quality / safety checking | 3,125 | Important to all surveyed |
| Laboratory testing costs | 1,625 | Important to all surveyed |
| Business maintenance | 0 | Not identified as being linked to Nursery Production FMS |
| Sterilisation and water treatment | 4,100 | Most important cost item |
| R&D, continuous improvement | 0 | Not identified as being linked to NPFMS |
| **Total** | **11,340** | **(maximum of $25,865, minimum of $465)** |

On average, additional capital costs associated with farm management system adoption were less for growing media manufacturers than they were for production nurseries. Growing media manufacturers spent more on annual operating expenses.

**Growing Media Benefits**

The average of financial benefits for growing media manufacturers is shown in Table 2.5.

**Table 2.5 NPFMS Financial Benefits – Growing Media Manufacturer Average**

| Benefit Item | Average Benefit per Business ($) | Comments |
|---|---|---|
| Reduction in substandard product - extra growing media sales | 60,000 | Manifest as fewer disputes with production nurseries and subsequent interruption to sales. |
| New markets accessed - extra sales | 30,000 | Linked to enhanced business reputation and reluctance of customers to purchase if the business was not accredited/certified under the Nursery Production FMS. Estimated by some at around 10% of turnover. |
| Input savings - labour | 3,750 | Nursery Production FMS has led to the adoption of labour saving technologies e.g. a systems based approach resulting in leaner and more efficient operations. |
| Input savings - water | 1,000 | Water was saved during production. |
| **Total** | **94,750** | **(maximum of $202,000, minimum of $0^)** |

^ 1 of 4 interviews completed stated that there were no financial benefits associated with Nursery Production FMS accreditation

Financial benefits of adoption, exceeded annual cash costs.

Other benefits of Nursery Production FMS participation identified by growing media manufacturers included:

- Staff meetings required as part of the NPFMS allow for additional input and planning and a more efficient business operation.
- Laboratory test results on growing media products are available to share with customers i.e. production nurseries.
- Improved product quality, consistency and safety meeting both customer and regulatory requirements.
- NPFMS participation safeguards media manufacturing businesses against claims by customers that growing media are to blame for greenlife losses.

Growing media manufacturers concluded that they must be accredited/certified or their customers will not buy from them. This situation is different from production nurseries whose customers are yet to insist on this requirement.

**Growing Media Return on Investment**

Growing media manufacturing business return on Nursery Production FMS investment was estimated using an average of capital cost, operating cost and financial benefit data presented in the above tables. Results are shown in Table 2.6.

**Table 2.6 Return on Investment – Growing Media Manufacturer**

| Financial Indicator | Result |
|---|---|
| Gross revenue - average annual increase | 94,750 |
| Operating costs - average annual increase | 11,340 |
| Capital costs – average annual cost over ten years | 8,000 |
| Net revenue increase | 75,410 |
| Return on investment | 29% |
| Break-even on investment | 7 years |

Definitions:
Gross revenue: additional business receipts before allowance for associated costs
Operating cost: annual costs directly relevant to the generation of business revenue
Capital costs: business investments required to meet Nursery Production FMS requirements and secure additional revenue
Net revenue: gross revenue after allowance for operating costs and annualised capital costs
Return on investment: the yield generated from Nursery Production FMS
Break-even on investment: number of years required to recoup Nursery Production FMS related outlays

As with production nurseries, the financial evaluation of growing media manufacturer investment in Nursery Production FMS shows that return on investment and time to break even are commercially acceptable for Australian small to medium business enterprises.

## 2.3 Greenlife Markets

The small size of this sector and the risk of individual firm identification prevented reporting of survey results by individual cost and benefit item. Only two businesses were surveyed.

In aggregate, additional capital costs associated with NPFMS adoption were modest (<$1,000) as were additional operating costs included labour (approximately $8,000) and maintenance (approximately $850). One respondent reported no financial benefits associated with Nursery Production FMS accreditation while the other identified modest labour savings. It is noted that at the time of survey Greenlife Markets had been Nursery Production FMS accredited for less than two years.

# 3 Value of NPFMS to the Australian Nursery Industry

This chapter analyses the financial return to the Australian nursery industry from investment in the Nursery Production FMS. Data was collated from HAL levy funded projects, NGIA secured grants and returns to individual nursery businesses to create an industry wide analysis. As with the individual nursery business analyses, non-financial benefits from investment in the Nursery Production FMS were also considered.

## 3.1 Cost of Nursery Production FMS to the Nursery Industry

Between 1992 and 2011 NGIA and HAL supported twenty two levy funded Nursery Production FMS development, implementation and administration projects, a total investment of almost $1.3 million – see Table 3.1.

**Table 3.1 Industry Investment in NPFMS 1992 to 2011**

| Code | Project Title | Cost ($) |
|---|---|---|
| NY138 | Compilation of guidelines for a proposed NIASA | 8,200 |
| NY417 | NIASA Technical Officers Workshop No. 1 | 13,116 |
| NY541 | NIASA Management Committee and Technical Officers Group Conference | 13,500 |
| NY504 | Implementation of NIASA in South Australia | 56,391 |
| NY95004 | Implementation of NIASA in South Australia | 22,640 |
| NY602 | NIASA Annual Conferences (cont'd NY9602) | 15,560 |
| NY96002 | NIASA Annual Conferences (cont'd NY602) | 66,472 |
| NY99006 | Strategic planning, ongoing development and evaluation of NIASA | 75,168 |
| NY02013 | Ongoing development of NIASA | 30,000 |
| NY03005 | Planning and development of the NIASA | 157,000 |
| NY03014 | Development, Environmental Management System framework for NIASA | 39,900 |
| NY04030 | Adoption of *HACCP* by NIASA | 10,000 |
| NY04029 | Adoption of EMS by NIASA and AGCAS | 50,000 |
| NY04014 | Ongoing development of NIASA | 15,000 |
| NY06018 | Manage and Administration – Nursery Accreditation and Awards - NIASA | 90,000 |
| NY07009 | Manage and Administration – Nursery Accreditation and Awards - NIASA | 103,000 |
| NY09013 | Nursery Industry Accreditation and Awards - Manage and Administration | 110,000 |
| NY06015 | NY06015 Industry & Stakeholder Marketing | 40000 |
| NY07501 | NY07501 Nursery Industry and Stakeholder Marketing | 54400 |
| NY08009 | NY08009 Industry & Stakeholder Marketing | 95000 |
| NY09017 | NY09017 Industry & Stakeholder Marketing | 100000 |
| NY10502 | NY10502 Industry & Stakeholder Marketing | 130000 |
| | **Total** | **1,287,967** |

Source: NGIA June 2012

Contributions to Nursery Production FMS development were also made by the Queensland Department of Employment, Economic Development and Innovation (DEEDI) and the South Australian Research and Development Institute (SARDI).

In addition to levy funded Nursery Production FMS development projects, NGIA also invested in the ongoing operation of the program. Annual ongoing investments were associated with annual administration costs and IDO network costs not covered by accreditation fees. An annual allowance of $300,000 was made in the benefit cost analysis for these industry operating expenses after consideration of NGIA data.

## 3.2 Benefit of Nursery Production FMS to the Nursery Industry

Nursery Production FMS financial benefit to the Nursery industry was estimated as the sum of individual business returns and was quantified using the following data:

- At the time of writing this report there were 274 Nursery Production FMS accredited/certified businesses. These businesses include production nurseries, growing media manufacturers and greenlife markets.
- Production nursery benefit was estimated as the net increase in revenue after operating and capital costs i.e. $85,769 per annum (see Table 2.3 above). Growing media manufacturer net benefit was estimated at $75,410 (Table 2.6) Greenlife market net benefit was not estimated due to both the small Australian population of greenlife markets and survey sample size consulted.
- An attribution factor of 50% was applied to this net benefit in recognition of survey results which indicated that a large share of those businesses adopting Nursery Production FMS received no financial benefit. This attribution factor is tested with sensitivity analysis.
- Benefits begin to accrue to adopting businesses who receive a financial benefit five years after the Nursery Production FMS was completed, reach a maximum impact for early adopters in 2010 and stay at this level for ten years. By 2020 it is assumed that any increase in business revenue attributable to Nursery Production FMS efficiencies is no longer relevant.

## 3.3 Financial Return to the Nursery Industry

Industry benefit cost analysis results using the above data are summarised in Table 3.2.

**Table 3.2 Benefit Cost Analysis Results - Industry Impact**

| Criterion | Core Assumptions ($' million, 30 year analysis period, 5% discount rate) |
|---|---|
| Present value of industry benefits ($'m) | 81.37 |
| Present value of industry costs ($'m) | 10.15 |
| Net present value ($'m) | 71.22 |
| Benefit cost ratio | 8.01 |
| Internal rate of return (%) | 40.5 |

Definitions:
Present value of benefits and costs: current lump sum value of future industry benefits or costs after allowing for the time value of money.
Time value of money estimated using a real, i.e. inflation adjusted, discount rate of 5%.
Net present value: is the present value of benefits less the present value of costs
Benefit Cost Ratio: is the present value of benefits divided by the present value of costs
Internal rate of return: is equivalent to yield achieved on the Nursery Production FMS investment

From an industry perspective and using the assumption that 50% of those who adopt the Nursery Production FMS receive a financial benefit, the Nursery Production FMS has delivered a strong industry benefit – net present value of $71.22 million with a benefit cost ratio of 8.01 and a return on investment of 40.5%.

Sensitivity analysis was used to test the assumption that 50% of those who adopt Nursery Production FMS receive a financial benefit. A pessimistic scenario assumed 25% of adopters receive a financial benefit while an optimistic scenario assumed 75% of adopters receive a financial benefit. The optimistic scenario takes account of industry comment that Nursery Production FMS has created a 'trickle down' impact for non-accredited/certified nurseries.

**Table 3.3 Sensitivity Analysis Results - Industry Impact**

| Criterion | Pessimistic Scenario (25%) | Core Assumptions | Optimistic Scenario (75%) |
|---|---|---|---|
| Present value of industry benefits ($'m) | 40.69 | 81.37 | 122.06 |
| Present value of industry costs ($'m) | 10.15 | 10.15 | 10.15 |
| Net present value ($'m) | 30.54 | 71.22 | 111.91 |
| Benefit cost ratio | 4.01 | 8.01 | 12.02 |
| Internal rate of return (%) | 28.1 | 40.5 | 48.3 |

The sensitivity test shows that even with only 25% of adopters receiving a financial benefit from Nursery Production FMS adoption (i.e. 69 nursery businesses), additional industry revenue more than covers investment costs.

## 3.4 Non-Financial Return to the Nursery Industry

In addition to increasing industry revenue, the Nursery Production FMS has generated a range of less easily quantified benefits for the Australian nursery industry. Other benefits identified by surveyed nursery production businesses included:

- Increased industry professionalism – implementation of the Nursery Production FMS has taken what can be a 'backyard' industry and provided best management practices along with systems for continuous improvement. In the case of nursery production businesses adopting the Nursery Production FMS, they are thought to account for a large share of Australian greenlife production.
- Trickle down benefits – even though only 274 businesses have adopted and become accredited/certified under the program, there has been a general lift in industry standards. Non accredited businesses are aware of Nursery Production FMS requirements and have adopted many low cost/high impact practices. Examples provided by industry include simple low cost initiatives such as routine sterilisation of secateurs and work benches?.
- Improved industry biosecurity – having the Nursery Production FMS in place has provided systems and knowledge to assist industry with the control of endemic

and exotic pests and diseases. Examples provided include phytophthora, western flower thrip and most recently myrtle rust.

- Protection of the industry's social licence to operate – local and state government planning departments are familiar with EcoHort and have been reassured of the industry's environmental credentials. This has resulted in an ongoing willingness to accommodate the industry within local communities.

No non-financial costs were identified by the study.

# 4 Value of NPFMS to the Australian Community

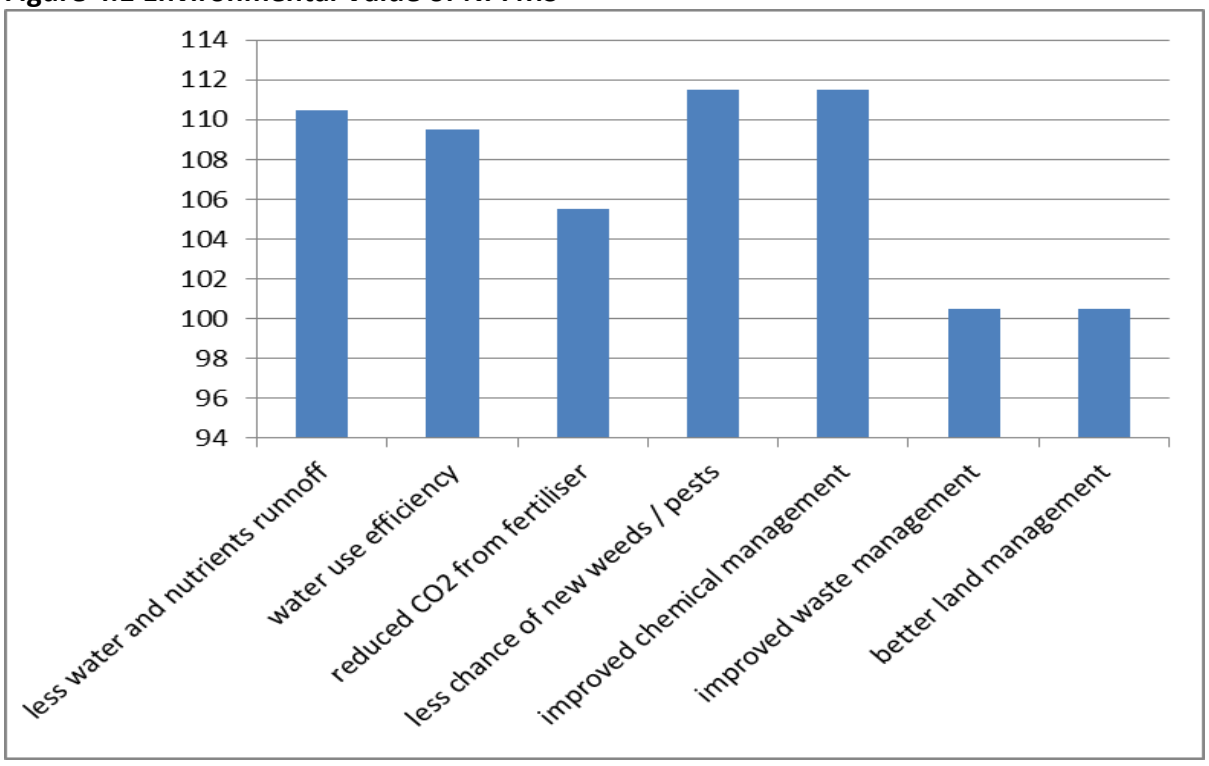
Chapter four addresses 'spillover' benefits to the Australian community from the nursery industry's investment in the Nursery Production FMS. The analysis is informed by survey data.

The survey of participating nursery industry businesses included questions on NPFMS benefits to the Australian community. Nursery industry businesses were asked to rank community benefits based on their observations, on a scale of one to five with 'five' being most important. Histograms presented in this chapter show the sum of these rankings.

## 4.1 Community Environmental Benefits

Seven major groups of community environmental benefits were identified and ranked using survey data.

**Figure 4.1 Environmental Value of NPFMS**

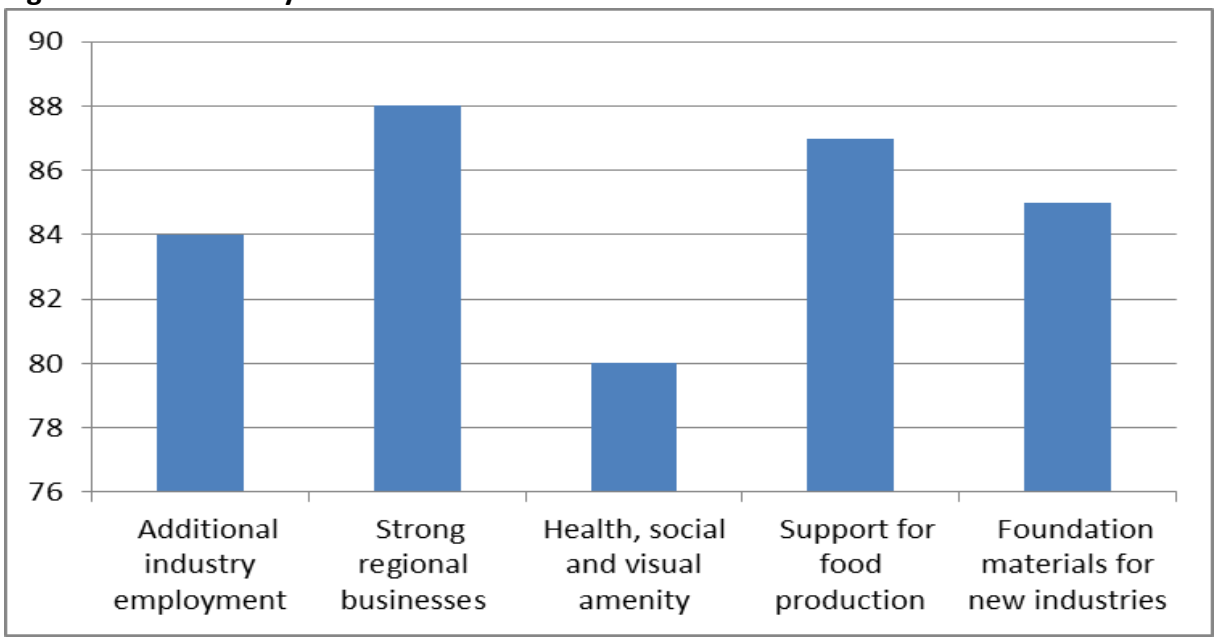


According to this data the most important spillover environmental benefits were improved biosecurity (less chance of invasive weeds and pests) and improved chemical management.

## 4.2 Community Social Benefits

Industry identified five groups of social benefits arising from Nursery Production FMS adoption. Strong regional businesses was ranked most highly. Foundation materials for new industries included provision of starter plants for the fibre (timber) industry – see Figure 4.2.

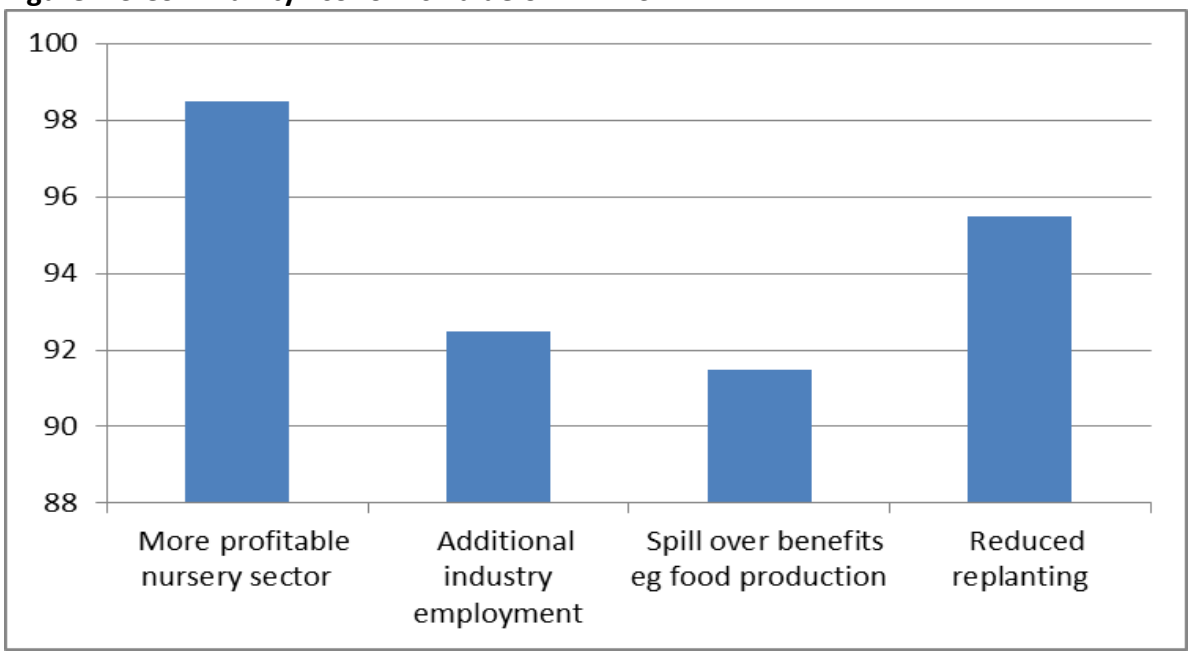
**Figure 4.2 Community Social Value of NPFMS**




## 4.3 Community Economic Benefits

Four major groups of broader community economic benefits were identified and ranked using survey data (Figure 4.3). A more profitable nursery sector was the most significant.

**Figure 4.3 Community Economic Value of NPFMS**




## 4.4 Community Economic Costs

No costs in addition to industry, NGIA and HAL investments described in Chapter 3 were identified.

# 5 Study Conclusions

Three types of benefit cost analysis have been completed. Results from each of the individual business, whole of industry and community spillover analysis show that benefits exceed Nursery Production FMS investment costs.

Not all adopting businesses have received a financial return. This study has shown that even if only one quarter of those who adopt receive a financial benefit, then HAL and NGIA's investment in the Nursery Production FMS has been worthwhile.

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NGIA Investment in NIASA spreadsheets provided in December 2011 and updated June 2012.

NGIA Explanation of NIASA, EcoHort and BioSecure HACCP available at: http://www.ngia.com.au/Category?Action=View&Category_id=119

NGIA Nursery Trade Register and location of nursery businesses is available at http://www.ngia.com.au/Category?Action=View&Category_id=598

## Appendix 1 – Survey Questionnaire, NPFMS Benefit Cost Analysis

### Survey Purpose

To understand the 'bottom line benefits' of the industry's Nursery Production Farm Management System (NPFMS), Nursery and Garden Industry Australia (NGIA) requires an objective and independent analysis of the benefits and costs to individual businesses, the industry as a whole and the Australian community. By taking the time to complete this confidential questionnaire you will be assisting with the development of an evidence-base to support, refine and increase the adoption of the Nursery Production Farm Management System. Individual survey responses will not be reported.

### Questions

1. In which program(s) of the Nursery Program Farm Management System (NPFMS) are you accredited/certified:
    a. Only the Nursery Industry Accreditation Scheme Australia (NIASA)
    b. NIASA plus EcoHort
    c. NIASA plus BioSecure
    d. All three programs i.e. NIASA, EcoHort and BioSecure HACCP?
2. In what year did you receive accreditation/certification in:
    a. NIASA _____
    b. EcoHort _____
    c. BioSecure _____
3. What enterprise type best describes your business:
    a. Production Nursery: indoor, tree/shrub, propagation, seedling / bloomers, in ground
    b. Growing media manufacturer
    c. Greenlife market
4. In what state/territory is most of your operation based?

    _____

### Costs and Benefits for Individual Businesses

5. Are you an NGIA member? Are the following NPFMS accreditation costs correct for your business?

**Cost of accreditation/certification programs (circle relevant cost)**

| Program | $ per annum NGIA Member | $ per annum NGIA Non-Member |
|---|---|---|
| NIASA | 400 – 530 | 730-880 |
| EcoHort | 0-195 | 0-390 |
| BioSecure HACCP | 0-195 | 0-390 |

Source: NNAC meeting Dec 2011

As well as accreditation and auditing costs, we are interested in additional *operating* costs and *capital* costs incurred by your business. Question 6 deals with operating costs and Question 7 with capital costs.

6. Besides accreditation and auditing, what additional operating costs are incurred by your business– type and amount per year? Please complete the table below. The table contains some examples which may or may not be relevant to your business. There is also room for you to add other costs.

**Operating Costs to individual business to meet the requirements of NPFMS**

| Cost Type | Annual cost to your business (Examples only) |
|---|---|
| Administration costs | • Paperwork associated with NPFMS takes our office administrator one day per week i.e. 0.2 FTE a total cost of $8,000 |
| Staff training | • Annually we invest in NPFMS training for all our staff. Including lost work time this costs about $5,000 |
| Labour for internal quality checking | • We employ the equivalent of an internal auditor for 0.25 FTE at a cost of $10,000 |
| Analytical testing | • Labour costs for pathogens costs us an extra $500 per year and we do this to comply with BioSecure HACCP |
| Facilities: may be operational costs but are also relevant in capital costs below | • Beds<br>• Water treatment<br>• Hygiene |
| Continuous Improvement | • Required by NIASA: annual cost to your business? |
| | |
| | |

7. What additional capital costs were incurred by your business in adopting the NPFMS? Please complete the table below by inserting capital items and cost when incurred. The table contains some examples which may or may not be relevant to your business. There is also room for you to add other capital costs.

**Capital Costs to individual business to meet the requirements of NPFMS**

| **Cost Type** | **Annual cost to your business (examples only)** |
|---|---|
| Drainage | • Before we could get certified we had to invest $25,000 in internal site drainage and we spent this money in 2005. |
| Record keeping software and training | • Software cost $500 and one off onsite training was a further $1000 |
| Beds | • Gravel maintenance cost us $*x* per annum |
| Hygiene | • Disinfecting |
| Continuous improvement | • 3 items to be listed here as per NIASA |
| | |
| | |
| | |
| | |

## Benefits

8. What benefits are there from adopting the NPFMS for your business – qualitative and quantitative? (Benefits that we can quantify are important.) Please complete the table below.

**Benefit of NPFMS to your business**

| Benefit Type | Value to your business (examples only) |
|---|---|
| OAMS insurance discount | • 10% off a premium of $5,000 per year. |
| Market access – NIASA assists us in meeting my interstate trade requirements | • Alternative certification arrangements would have been more expensive for my business and interstate sales are now worth $500,000 per year |
| Improved product quality | • We attribute the quality 'dividend' to additional sales of 1% or 400 six inch pots valued at $0.50 each |
| Access to the Industry Development Officer (IDO) network | • Working with the IDO we have identified and adopted new technology that improves efficiency. We wouldn't have identified this opportunity outside the NPFMS. As a result we expect to save $2,000 per year on our energy bill |
| Enhanced business reputation | • See quality 'dividend' above. |
| Reduced stock throw out rate | • Our throw out rate was 17% now 4%<br>• This translates into sales of 4,000 extra six inch pots with a wholesale value of $1.50 each |
| Input savings<br>E.g. labour, energy, water (Smart Approved WaterMark), fertiliser, chemicals, etc. | • |
| Meeting customer requirements (NPFMS may become a precondition of purchase) | • |
| Other:<br>Management efficiencies<br>Risk reduction<br>Marketing advantages | • |
| NPFMS sets a standard for staff to meet - preventative | • Proactive rather than reactive – forces cultural shift in attitude |
| | • |

**Costs and Benefits for Nursery Industry as a Whole**

9. What benefits are there from the NPFMS for the industry as a whole?

   On a scale of 1 to 5 where 5 is the most important and 1 is the least important, what is the importance of the following potential nursery industry benefits?

   Please complete the table below.

**Benefit of NPFMS to the nursery industry**

| Benefit Type | Value to the nursery industry on a scale of 1 - 5 |
|---|---|
| Access to additional markets | |
| Community support for nursery industry | |
| More favourable regulation | |
| Improved profitability through efficiency | |
| Savings in disputes and litigation | |
| Major Biosecurity breaches avoided | |
| Quality assurance for customers | |
| Other (please specify) | |

10. Besides the cost of development, are there any costs to the nursery industry as whole of having a NPFMS in place? If yes – list them

_____

_____

_____

**Costs and Benefits for the Australian Community from NPFMS**

11. What benefits are there for the Australian community from having the NPFMS?

    On a scale of 1 to 5 where 5 is the most important and 1 is the least important, what is the importance of the following potential benefits for the Australian community? Please complete the table below.

**Benefit of NPFMS to the Australian community**

| Benefit Type | Value to Australian community on a scale of 1 - 5 |
|---|---|
| **Better environmental and natural resource outcomes**<br>For example:<br>• Less water and nutrients leaving the nursery<br>• Less demand for water for production (water use efficiency)<br>• Reduced fertiliser use resulting in carbon emission savings<br>• Less chance of new plant weeds/pests<br>• Improved chemical management (best practices)<br>• Improved waste management<br>• Improved land management (erosion, etc) | |
| **Economic benefits**<br>For example:<br>• More profitable nursery sector<br>• Additional industry employment<br>• Spill over benefits to other industries eg landscape industry, food and fibre production<br>• Reduced replanting – inappropriate plants and failure of unhealthy stock | |
| **Social benefits**<br>For example:<br>• Additional industry employment<br>• Strong nursery businesses in regional Australia<br>• Increased demand for gardening with associated positive spin offs for health, social amenity, visual amenity<br>• Support food production in Australia underpinning food security and clean and green produce<br>• Provide starter plants for the fibre industry (timber) across Australia | |
| **Other benefits?** | |

1. Are there other comments you would like to make in relation to the operation of the NPFMS?

_____

_____

_____

**Thank you for your time**, the cost benefit analysis will be posted on the NGIA website

**NY09010** Appendix 3: Review of the Nursery & Garden Industry Extension Network (Yellow House Consulting, 2012)

# *Nursery & Garden Industry Extension Network Review*

## An external review of options to improve and deliver top quality extension, accreditation and market development services for the nursery production industry

**August 2012**

**Commissioned by:**

Nursery & Garden Industry Australia

**Conducted by:**

Yellow House Consulting

*Working with you to develop your industry*

**Disclaimer**

While very effort has been made to ensure the accuracy of contents as at August 2012, Yellow House Consulting accepts no liability for the information provided.

**Yellow House Consulting** – ***Working with you to develop your industry***

ABN – 9636 7369 870
4 Bellata Court
GLENBROOK NSW 2773

Mobile: 0404 817 903
Phone/fax: 02 4739 1474
Email: yellowhc@bigpond.com

## Executive Summary

Founded in 1945, Nursery & Garden Industry Australia (NGIA) is the peak industry body for the Australian nursery and garden industry and is responsible for overseeing the national development of a diverse and essential industry.

The industry vision is 'A unified Australian nursery and garden industry that is productive, profitable and sustainable'.

This review involved an assessment of several industry documents and mapping their current relevance against the Nursery & Garden Industry Strategic Investment Plan 2012 – 2016. A summary of the reviewed documents is contained in Appendix 2.

Based on the review, three possible models for improved extension, accreditation and market development have been identified. This report outlines the three options, summarises advantages and disadvantages and provides discussion points for each.

The three identified options are:

1. Improved 'Business as usual'
2. Regional
3. Skill & Regional

### Option 1 – Improved 'Business as Usual'

In July 2012 an independent costs benefit analysis of the Nursery Production Farm Management System (NPFMS) determined it has provided a significant return for industry with a likely benefit cost ratio of 8.01 and a return on investment of 40.5%. This positive cost benefit analysis could be used to help justify the continuation, even expansion, of the NPFMS as well as maintaining the existing State based IDO network.

Improvements to the 'Business as Usual' model could include:

- Promoting the positive cost benefit analysis results to the production sector to increase participation in the NPFMS.
- Using the positive NPFMS cost benefit analysis results to help create market development strategies and/or packages, targeting the retailers, landscapers and, in particular, urban planners/ local government.
- Employment of a Market Development Manager (MDM) to focus on adding value to nursery products post farm gate and integrate within the IDO network.
- Engaging an independent NPFMS audit process to reassess say 5% of NIASA businesses should be considered.
- Providing training for existing IDOs in market development strategies that build on best management practices, such as the NPFMS.
- Creating a 'Market Development' NPFMS module for production businesses, which could be offered only to accredited businesses and/or non-accredited businesses.
- Collaboration with the Turf Industry and environmental organisations, such as Landcare, to grow the market for plants and greenlife in the urban environment.

## Option 2 –Regional

The Regional model is essentially a continuation of the existing IDO network as described in option 1 with the exception that IDOs are nationally coordinated and managed on a regional basis. These services would not be defined by state boundaries and existing resources could, therefore, be allocated more efficiently and on a more equitable basis.

The improvements to option 1 listed above also apply to option 2 – Regional.

## Option 3 – Skill & Regional

The opportunity to identify, prioritise and engage extension, accreditation and market development resources based on skill and capacity to deliver on a regional basis is the third (and possibly most revolutionary) option.

Essentially this option would involve replacing the current State based IDO structure with resources that are either contracted out by NGIA to external providers and/or NGIA employing personnel with specific skills sets to complete dedicated Strategic Investment Plan (SIP) priorities.

Existing resources, including State Associations and/or IDOs, could be engaged under this model following a merit based recruitment and/or contract tender process. For example, the State Associations (and other service providers) could be asked to bid for and provide extension, accreditation and market development services on a regional basis, such as the Tropical North, Subtropical, Temperate, Southern and Western zones.

Any State Associations that were successful in bidding for these services would be able to 'transition' existing resources to provide enhanced market development services that are more directly aligned to the Strategic Investment Plan.

# Contents

## Introduction

Industry Development, or Capacity Building, is defined as the process of informing and empowering those in horticulture to make better business decisions. In other words, industry development bridges the gap between R&D and industry adoption, enabling industry strategic plans to be implemented.

Industry development strategies can be classified according to the five best practice models for extension as determined by the Cooperative Venture for Capacity Building (CVCB), being:

- **Facilitation** – Define own goals/learning needs & work with a facilitator to improve
- **Technological Adoption** – Development of specific technology, management practice or decision support system. May involve trials/demos
- **Training** – Specifically designed training programs/workshops to increase understanding/skill
- **Information** – Access to a broad range of information, IE Websites, newsletters, conferences
- **Consultant/Mentor** - An advisor works over time with an individual and/or group to improve their business.

Each of these strategies entails a different approach and requires dedicated resources and expertise. Many IDO type projects in horticulture incorporate a mixture of these extension strategies. Appendix 1 provides a summary of industry development/capacity building initiatives within horticulture.

The nursery & garden industry was one of the first horticulture industries to engage Industry Development Officers (IDOs) and develop an industry accreditation scheme in the 1990s. The industry has also implemented a variety of market development programs, including 'Flora for Fauna', 'Life is a Garden' and 'Plant Life Balance'.

The IDO network has been underpinned by the development and implementation of the Nursery Industry Accreditation Scheme, Australia (NIASA) which has evolved and now known as the Nursery Production Farm Management System (NPFMS). In July 2012, an independent cost benefit analysis of the NPFMS has indicated a benefit cost ratio of 8.01 and a return on investment of 40.5%.

The industry strategic investment plan 2012-2016 has identified the need for enhanced market development strategies and initiatives that are interconnected to and supported by best management practices, quality product and appropriate governance.

The opportunity exists to ensure market development initiatives capitalise and build on the success of the existing extension and accreditation services. Also, opportunities exist to refine and tailor extension and accreditation services to ensure they better reflect the priorities of the Strategic Investment Plan (SIP).

## Discussion

The first independent cost benefit analysis of the Nursery Production Farm Management System has provided substantial justification for the industry investment in NIASA, EcoHort and BioSecure HACCP.

The analysis also provides new and substantial promotional information for NGIA to use to increase the number of NPFMS certified businesses and increase customer confidence in NPFMS products and services. This has the potential to increase the current number (274) of NPFMS businesses from an estimated total of 3,500 production nursery businesses in Australia.

The component providing the largest financial benefit from NPFMS is **increased sales via marketing advantage or enhanced reputation**, estimated to be $60,000 per business for certified production nurseries. Maximizing and building on this is essential for maintaining the benefit from and continued expansion of the NPFMS.

In addition to the NPFMS, the success of the industry communications, training and leadership development programs are also recognised and used as examples to other horticulture industries.

The mixture of industry development programs provided by the Nursery & Garden Industry covers the five best practice models for extension: Facilitation, Technology adoption, Training, Information and Consultant/mentor. Both the Development Officer network and the Farm Production Management System incorporate all five best practice models for extension and this has contributed to their success.

However, despite this success, market forces within the industry are changing and there is a consistent and repetitive message in the documents reviewed that this success needs to be built upon and industry development strategies need to better reflect and incorporate the current strategic objectives.

As stated in the Nursery & Garden Industry Strategic Investment Plan 2012 – 2016, "In a competitive but stagnant market, producers can only enhance profitability at the cost of their competitors. The market failure role of the levy system is to grow the overall market to enable all producers an opportunity to increase their profitability".

This review has involved a review of several documents and mapping their current relevance against the Nursery & Garden Industry Strategic Investment Plan 2012 – 2016. The documents are:

- Nursery & Garden Industry Strategic Plan 2010 – 2015
- Fostering and enhancing the best national and state management and Development Officer structures (NY04010) – 'The Moko Report'
- Nursery & Garden Industry Development Needs Assessment (NY08014)
- Industry Development Officer Network for the Nursery and Garden Industry project (NY09010) – recent milestone report
- Nursery Industry Training and Recognition 2009-2011 (NY09011) – final report
- Funding Guidelines for NGI Training Workshops & Field Days 2011/2012
- Nursery & Garden Industry Strategic Investment Planning Meeting – November 2011
- Nursery Production BCA Draft Report – July 2012

## Opportunities

The Nursery & Garden Industry is one of the most diverse and complex horticulture industries in Australia. With up to 10,000 different plant varieties for sale at different times of the year and at different growth stages, the opportunity to develop and implement an accurate market versus supply forecasting system, such as those developed for Avocadoes and Mangoes, could be difficult, costly and with limited effectiveness.

The IDO network has been recognised as an effective conduit for providing industry information and training, and is now ready to go the next step towards meeting the wider objectives set out in the Industry Strategic Plan. This will entail broadening the contribution of the network towards marketing and innovation activities

The NPFMS is demonstrated to be a valuable industry investment that has resulted in an increase in business productivity and profitability along with an enhanced reputation for the industry.

The opportunity therefore, exists for the nursery and garden industry to build on the success of the IDO network and the NPFMS to develop and incorporate measures that will grow the overall market.

Similar to the EcoHort and BioSecure HACCAP modules, the potential for development of a NPFMS 'Market Development' module could be considered. Such a module could significantly enhance industry skill levels in market development and provide a direct link between NPFMS and the 2012-2016 Strategic Investment Plan desire for a significant increase in market development while maintaining best management practices.

Based on the review, three possible models for improved extension, accreditation and market development have been identified. This report outlines the three options, summarises advantages and disadvantages and provides discussion points for each.

The three identified options are:

1. Improved 'Business as usual'
2. Regional
3. Skill & Regional

## Option 1 – Improved 'Business as Usual'

The Improved 'Business as Usual' model is essentially maintenance of the current State based IDO network. IDOs implement and assess NPFMS in their state and the process of payments based on activities and/or outcomes would be maintained and/or improved. Industry members and State Associations are familiar (and relatively comfortable) with this model.

In July 2012, AgEconPlus conducted an independent costs benefit analysis of the Nursery Production Farm Management System (NPFMS). While not all nursery businesses that invest in a NPFMS receive a financial return, many received a substantial financial return from new markets accessed, reduced stock wastage, management efficiencies, labour and chemical savings.

Assuming around half of those who adopt the farm management system receive a financial benefit, the farm management system has delivered a benefit cost ratio of 8.01 and a return on investment of 40.5%. A more optimistic assumption that 75% of businesses receive a financial benefit results in a benefit costs ratio of 12.02 and a 48.3% return on investment.

This positive cost benefit analysis could be used to help justify the continuation, even expansion, of the NPFMS as well as maintaining the existing State based IDO network.

### Advantages & Disadvantages of Option 1 - Improved 'Business as Usual'

| Advantages | Disadvantages |
|---|---|
| State Associations retain a direct investment in the Industry Development program via the HAL matched Voluntary Contribution process. | Indirect and multiple lines of reporting can result in conflicting priorities and a lack of focus on the Strategic Investment Plan. |
| Existing IDO expertise is likely to be maintained. | Opportunity to engage new expertise is minimal. |
| Minimal change and, therefore, minimal uncertainty and angst within the industry and State Associations. | Reinforcement of the current IDO network approach, which is not aligned with the Strategic Investment Plan. |
| Opportunity to use the positive cost benefit analysis results of the NPFMS for its promotion and recognition. | Reduced opportunity to increase the focus on and investment in market development strategies. |

### Discussion Points – Improved 'Business as Usual'

As the title suggests, the *Improved 'Business as Usual'* model implies minimal change and therefore minimal uncertainty and minimal angst among stakeholders. However, 'Business as Usual' can also result in lost opportunities. Important discussion points include:

- Industry levy and matched Voluntary Contribution funds should be used to grow the overall nursery market, as opposed to helping individual nurseries compete against each other.
- Of the following potential improvements, what are the likely industry benefits from:
    - Promoting the positive cost benefit analysis results to the production sector to increase participation in the NPFMS.

- Using the positive NPFMS cost benefit analysis results to help create market development strategies and/or packages, targeting the retailers, landscapers and, in particular, urban planners/ local government.
- Employment of a Market Development Manager (MDM) to focus on adding value to nursery products post farm gate and integrate within the IDO network.
- Engaging an independent NPFMS audit process to reassess say 5% of NIASA businesses should be considered.
- Providing training for existing IDOs in market development strategies. The NPFMS Heads of Agreement details the type and level of skill required by Technical Officers and this could include a minimum level of skill and/or knowledge in market development strategies for production businesses.
- Creating a 'Market Development' NPFMS module for production businesses, which could be offered only to accredited businesses and/or non-accredited businesses. The development of such a module should include consultation with key value chain stakeholders and the content must link with the SIP and help grow entire nursery market.
- Collaboration with the Turf Industry and environmental organisations, such as Landcare, to grow the market for plants and greenlife in the urban environment.

- The existing IDO network lacks skill and experience in market development (IE adding value to the nursery product within the value chain). What additional improvements could be made to further develop the nursery market if the IDO network remains in place?

## Option 2 – Regional

The *Regional* model is essentially a continuation of the existing IDO network as described in option 1 with the exception that IDOs are nationally coordinated and managed on a regional basis. The extension and accreditation services would not be defined by state boundaries and existing resources could, therefore, be allocated more efficiently and on a more equitable basis.

This would enable extension, accreditation and market development services to be provided on a regional basis, such as the Tropical North, Subtropical, Temperate, Southern and Western zones. While individual roles would be directly accountable to the national coordination from NGIA, the opportunity for personnel to be based in State Association Offices exists.

This approach could be justified by both the positive cost benefit analysis of the NPFMS and the various industry documents that say significant efficiencies would be gained through a nationally coordinated, regional structure (see appendix 2).

### Advantages & Disadvantages of Option 2 - Regional

| Advantages | Disadvantages |
|---|---|
| Resource efficiency gains through less duplication and simplified, direct national management, reporting and accountability. | State Associations may not agree to provide Voluntary Contribution Funding. This may have a significant impact. |
| Resources can be tailored to fit the characteristics and requirements of individual regions. | May result in State Associations losing resources, possibly affecting their viability and a reluctance to collaborate in delivering the SIP. |
| Increased ability for resources to be aligned with the SIP. | Potential loss of existing IDO expertise. |
| Increased flexibility, if required, IE a disease outbreak in region XYZ can be directly addressed. | Conflicts with industry organisational structures, potentially resulting in confusion and disharmony. |
| From an industry member point of view, minimal change. | |
| Opportunity to use the positive cost benefit analysis results of the NPFMS for its promotion and recognition. | |

### Discussion Points – Regional

The *Regional* model offers significant efficiency gains in the delivery of similar services as described in option 1, assuming cooperation and collaboration with the State Associations is maintained. Important discussion points include:

- Industry levy and matched Voluntary Contribution funds should be used to grow the overall nursery market, as opposed to helping individual nurseries compete against each other.
- Accreditation fees collected from NPFMS businesses may be used as HAL Voluntary Contribution for matched funding. For example, assuming $500 pa is collected from 274 NIASA businesses [$137,000] along with $100 pa collected from 102 EcoHort &

BioSecure HACCP businesses [$10,200], this would result in almost $150,000 pa available for voluntary contribution funding. Workshop registration fees can also be used as HAL Voluntary Contributions for matched funding.

- The potential improvements listed for the *Improved 'Business as Usual'* model are also applicable for the *Regional* model, namely:
    - Promoting the positive cost benefit analysis results to the production sector to increase participation in the NPFMS.
    - Using the positive NPFMS cost benefit analysis results to help create market development strategies and/or packages, targeting the retailers, landscapers and, in particular, urban planners/ local government.
    - Employment of a Market Development Manager (MDM) to focus on adding value to nursery products post farm gate and integrate within the IDO network.
    - Engaging an independent NPFMS audit process to reassess say 5% of NIASA businesses should be considered.
    - Providing training for existing IDOs in market development strategies. The NPFMS Heads of Agreement details the type and level of skill required by Technical Officers and this could include a minimum level of skill and/or knowledge in market development strategies for production businesses.
    - Creating a 'Market Development' NPFMS module for production businesses, which could be offered only to accredited businesses and/or non-accredited businesses. The development of such a module should include consultation with key value chain stakeholders and the content must link with the SIP and help grow entire nursery market.
    - Collaboration with the Turf Industry and environmental organisations, such as Landcare, to grow the market for plants and greenlife in the urban environment.
- If the existing IDO network is engaged under a nationally coordinated, regional model, what additional improvements could be made to further develop the nursery market?

## Option 3 – Skill & Regional

The opportunity to identify, prioritise and engage extension, accreditation and market development resources based on skill and capacity to deliver in particular regions is the third (and possibly most revolutionary) option.

This option would involve replacing the current State based IDO structure with resources that are either contracted out by NGIA to external providers and/or NGIA employing personnel with specific skills sets to complete dedicated Strategic Investment Plan (SIP) priorities.

State Associations (and other service providers) could be asked to bid for and provide extension, accreditation and market development services on a skill & regional basis. For example, a tender brief for the delivery of industry development services in market development, capacity building, industry communications, innovation and governance in each region (such as the Tropical North, Subtropical, Temperate, Southern and Western) could be developed.

Any State Associations that were successful in bidding for these services would be able to 'transition' existing resources to provide enhanced market development services that are more directly aligned to the Strategic Investment Plan. Existing resources, including IDOs, could be engaged under this model following a merit based recruitment and/or contract tender process.

As an example, Ausveg is currently developing a sub-contract process for the provision of industry development services to the Vegetable industry. This will replace the Vegetable Industry Development Program (VIDP) and potential service providers are currently being asked to register if they believe they will be interested in the forthcoming tender process.

Previously in the vegetable industry, a merit based tender process was developed and run by HAL for the VIDP 2009 - 2012. However, the success of this program was limited due to a variety of reasons including a lack of involvement and support from certain stakeholders within the industry. This serves to highlight the need for engagement and real collaboration with all key stakeholders from the inception to implementation of any new industry development program.

### Advantages & Disadvantages of Option 3 - Skill & Regional

| Advantages | Disadvantages |
|---|---|
| The best available resources/skill set is engaged to carry out the SIP initiatives. | State Associations may not agree to provide Voluntary Contribution Funding. This may have a significant impact. |
| Resource efficiency gains through simplified, direct national management, reporting and accountability. | May result in State Associations losing resources, possibly affecting their viability and a reluctance to collaborate in delivering the SIP. |
| Resources can be tailored to fit the characteristics and requirements of individual regions. | Potential loss of existing IDO expertise. |
| Increased flexibility, if required, IE a disease outbreak in region XYZ can be directly addressed. | Possible confusion from an industry member point of view due to the significant change. |

| | |
|---|---|
| Improved monitoring and evaluation, (assumes a well designed tender brief with key performance indicators). | Possible loss of face to face contact with key industry stakeholders, resulting in reduced industry networking and recognition of the levy program. |

## Discussion Points – Skill & Regional

The *Skill & Regional* model may offer significant efficiency gains in the delivery of tailored industry development services that are directly aligned with the SIP. However, this approach represents a significant change and has the potential to cause disharmony within and/or between the industry associations. Important discussion points include:

- Industry levy and matched Voluntary Contribution funds should be used to grow the overall nursery market, as opposed to helping individual nurseries compete against each other.
- The benefits of tendering the industry development services and being open to contract arrangements as well as direct employment by NGIA.
- A detailed consultation process with key industry stakeholders should be carried out to ensure engagement and recognition of the benefits from the skill based approach.
- A transition period and process will need to be determined.
- A detailed and professional scoping and tender briefing process will need to be undertaken. This should include reviewing the potential improvements listed for the *Improved 'Business as Usual'* and *Regional* models and, in particular:
    - Collaboration with the Turf Industry and environmental organisations, such as Landcare, to grow the market for plants and greenlife in the urban environment.
    - The opportunity to contract a completely separate and independent audit inspection service for the NPFMS.

# Appendix 1 – Industry Development/Capacity Building in Horticulture

Industry Development, or Capacity Building, is defined as the process of informing and empowering those in horticulture to make better business decisions. In other words, Industry Development bridges the gap between R&D and industry adoption, enabling industry strategic plans to be implemented.

Horticulture Australia funds up to 350 active industry development projects with an annual budget of close to $20 million and a combined 'life of project' value of $65 million. Peak industry Bodies are the main service providers.

Industry Development investments in horticulture include:

- Employment of Industry Professionals such as IDOs & IDMs
- Study tours within Australia and overseas
- Conferences, forums and seminars
- Training programs, workshops and/or field days
- Scholarships and leadership development programs
- Communication programs, newsletters, magazines, websites, DVDs
- Other (Best practice, accreditation, benchmarking, software programs, etc).

To help ensure the specific industry development needs of an industry are identified and appropriately addressed, HAL developed an Industry Development Needs Assessment (IDNA) process. The IDNA has been used by the majority of HALs industries to determine the most appropriate mix industry development strategies and actions.

As a result of an IDNA, most industries now have

- Nationally coordinated industry development 'program' approach with regional delivery 'sub programs'
- A focused industry development plan that directly links with their industry strategic plan
- Greater focus on the entire supply chain
- Greater focus on ensuring market information drives decision making
- A recognised need to engage with the private sector and commercial providers (agribusiness)
- The new program approach replaces a previous 'multiple project' approach.

While there is a recognised need to engage with the private sector and commercial providers (agribusiness), there is a high level of uncertainty about how to do this and maintain information integrity and ensure no an unfair commercial advantage. Examples include:

In 2009, the Vegetable Industry Development Program undertook an open tender process for the delivery of Program Coordination & several sub programs, including: Consumers & Markets, Knowledge Management, People Development & Leadership, IPM, Economics (previously contracted), and the regional delivery sub programs of Innoveg and

Collaborative Industry Organisations. (Unfortunately, the contracting of these regional delivery sub programs was unfortunately delayed causing significant angst)

Citrus have employed a General Manager – Market Development who has a key role in ensuring a focus on market information and coordinating regional based 'Value Chain Coordinators'.

Macadamia has developed several linked programs to cover industry communications, market development and regional delivery.

Nursery has a nationally coordinated industry development program whereby NGIA effectively sub contract services to States Representative Bodies with payments based on recorded activities, outputs and outcomes.

The Cooperative Venture for Capacity Building (CVCB) was funded by the Rural Research and Development Corporations between 2000 and 2007. It researched the underlying strategies in Capacity Building/Industry Development and identified and developed information on five best practice models for extension, being: Facilitation, Technology adoption, Training, Information and Consultant/mentor.

**Facilitation** – Define own goals/learning needs & work with a facilitator to improve

**Technological Adoption** – Development of specific technology, management practice or decision support system. May involve trials/demos

**Training** – Specifically designed training programs/workshops to increase understanding/skill

**Information** – Access to a broad range of information, IE Websites, newsletters, conferences

**Consultant/Mentor** - An advisor works over time with an individual and/or group to improve their business

Many HAL industry development projects include a mix of these strategies, such as IDO projects. For more information on the outputs and outcomes from the CVCB, go to www.rirdc.gov.au and *search* 'capacity building'.

# Appendix 2 – Review of Industry Documents

## Nursery & Garden Industry Strategic Plan 2010 – 2015

The Nursery & Garden Industry's Strategic Plan 2010-2015 consists of the following five objectives and underlying strategies:

**Objective 1: Markets**

*Strategy 1.1*: Build demand for nursery and garden industry products and services through coordinated marketing and promotion
*Strategy 1.2*: Underpin promotional campaigns, new product development and public relations with existing and emerging values of plants
*Strategy 1.3*: Build the next generation of nursery and garden customers

**Objective 2: Capacity**

*Strategy 2.1*: Ensure the whole industry has access to appropriately trained human resources
*Strategy 2.2*: Enhance adoption of best industry practice across the production sector
*Strategy 2.3*: Provide general and retail customer confidence through industry accreditation

**Objective 3: Communication**

*Strategy 3.1*: Establish effective communication and engagement with industry and the community
*Strategy 3.2*: Coordinate an engagement program with all levels of Government
*Strategy 3.3*: Have a strong unified industry with one voice
*Strategy 3.4*: Strengthen the benefits derived in value chain interactions

**Objective 4: Innovation**

*Strategy 4.1*: Identify growth opportunities for the industry and the implications for R&D investment
*Strategy 4.2*: Invest in research and technology development across high priority areas
*Strategy 4.3*: Monitor and evaluate the return on investment in R&D and improve the capacity to improve future investments

**Objective 5: Governance**

*Strategy 5.1*: Well informed industry
*Strategy 5.2*: Increasing funding
*Strategy 5.3*: Efficient service delivery
*Strategy 5.4*: Risk management planning and responses, including biosecurity

## Nursery & Garden Industry Strategic Investment Plan 2012 – 2016

The Strategic Investment Plan (SIP) details the components of the Nursery & Garden Industry's Strategic Plan that use the industry levy and Commonwealth matching funds. In other words, the Strategic Plan is the Industry's broader platform for investment and activity, and incorporates activities not funded by the industry levy program.

Past and recent strategic investment priorities have been almost equally split between the five objectives of the industry Strategic Plan. However, looking to the future, a change in investment priorities is required. The industry has world class best management practices, irrigation management practices have been developed through years of drought and water restrictions and industry has also invested in staff development, training programs and industry accreditation.

However, during this period of industry improvement and capability development the channels for marketing the product have changed dramatically. As a result, the key focus of the 2012 - 2016 strategic investment plan is based on three key principles:

- Grow the market for plants and greenlife in the urban environment.
- Communicate the benefit of plants to all industry sectors, influencers at all levels of government and consumers
- Ensure industry has processes in place re governance and biosecurity to enable businesses to operate effectively.

These three areas of focus are interconnected and dependent on all being strongly supported by best management practices, quality product and appropriate governance.

As a result, the intended funding split for the 2012 - 2016 Strategic Investment Plan (SIP) is outlined in table 1.

**Table 1: Summary of investment split Objective**

| | Existing Split | SIP Consultation |
|---|---|---|
| **MARKETS** | 17% | 30% |
| **CAPACITY** | 19% | 9% |
| **COMMUNICATION** | 21% | 36% |
| **INNOVATION** | 19% | 10% |
| **GOVERNANCE** | 22% | 15% |

The 2012 - 2016 Strategic Investment Plan (SIP) details the proposed change in investments and highlights the interactive and collaborative approach required to achieve each of the five strategic objectives. Below is a summary of the investment rational for each objective and the 'to be commissioned' investments.

### Objective 1: Increase the sales value of nursery products and services through marketing and promotion

The industry has invested heavily into processes for industry best practice and capacity development during periods of tough trading due to environmental and economic times. The market channels have changed dramatically over that time and there is a need to focus on "expanding" the market for plants in the urban environment. This will require industry to undertake a two pronged marketing approach via the key influencers and planners who designate green space in regional planning and consumers who Nursery Industry Strategic Investment Plan 2012-2016 have the space to plant or can require that their environment is well planted.

Industry data shows that while the area occupied by the urban forest is 40% public land and 60% private land, the split in plant markets is 60% landscaper managed and 40% consumer managed. The projects to be scoped will focus on addressing this and be measured by sales figures, canopy cover improvements and planning decisions. There is a need to ensure that the benefits of investment in the market expansion are “identified, captured and reflected” within the industry value chain in a fair and equitable manner.

Allocated investments of $4,458,000 to 2015/16 include the following new allocations:

- Greenlife Marketing, $700,000/pa ($2.7mill)
- Market Data, aprox $160,000/pa ($668,000)
- Market Development, aprox $200,000/pa ($800,000)

### Objective 2: Enhance the capacity and efficiency of the industry's resources through upgrading industry skills, knowledge and practice

Industry capacity development has focussed on training and availability of the extension network for on property development and technology transfer. The investment will be maintained but in future will have a different focus on outcomes that are driving the market development and increased value for product off farm, rather than value improvements in the production process. Industry training and review of resources will be required to deliver this new outcome

Allocated investments of $2,405,000 to 2015/16 include the following new allocations:

- Young Leaders Development, aprox $35,000/pa ($105,000)
- NGI FMS, aprox $35,000/pa ($105,000)

### Objective 3: Build industry support through shaping government, public and related industry understanding of the industry’s benefits, and enhance these benefits through collaboration

The rationale supporting this Investment is that industry needs to convince key decision makers and consumers that plants have a real value to the liveability of cities as well as impacting on health and wellbeing. This will be done via targeted communications activities utilising Fora, electronic media and traditional communication vehicles. It is critical in achieving this Industry wide consistency of communication that industry stakeholders

participate. Industry has developed a full communications matrix. There is greater focus on the IDO network facilitating this increased communication to assist in growing the market.

This objective accounts for up to 36% of the total investment. The projects to be scoped will have outcomes that will be fully aligned with achieving Objective 1 - market growth

Allocated investments of $4,413,000 to 2015/16 include the following new allocations:

- Communications, aprox $150,000/pa ($150,000)
- Government targeted communications, aprox $200,000/pa ($600,000)
- Industry Communications, aprox $255,000/pa ($835,000)

### Objective 4: Invest in nursery product/service development to enable the industry to respond to growth opportunities and challenges

The industry has moved from process focused R&D to "urban value" research to justify the increased use of those product produced. The Industry must maximise the opportunities for products under production as space in the urban environment is at a premium. This is fully documented in the publication by Professor Tony Hall, "The Life and Death of the Australian Backyard" CSIRO publishing.

Allocated investments of $2,734,000 to 2015/16 include the following new allocations:

- Urban Landscapes, approx $150,000/pa ($300,000)
- To be scoped R&D, approx $150,000/pa ($450,000)
- Managing RD&E, approx $220,000/pa ($600,000)
- TBA, approx $75,000/pa ($225,000)

### Objective 5: Support the industry through services and resources that enhance its capacity to respond to issues, capture opportunities and achieve the vision of this strategic plan.

While not covered by specific projects the industry accreditation and training programs need to recognise the demand on business for issues such as OH&S, Chemical usage and Resource management which are ‘different’ for the industry due the diversity of business types and production processes. These may require funding to avert potential market failure issues within the time scope of this plan.

The allocated investment of $2,734,000 to 2015/16 includes existing allocations only.

## Fostering and enhancing the best national and state management and Development Officer structures (NY04010) – 'The Moko Report'

HAL Project NY04010 'Fostering and enhancing the best national and state management and Development Officer structures' was an in-depth study of the structure and resources required to build the profitability of the nursery and garden industry. The final report was released in September 2005.

Based on quantitative and qualitative research, along with 370 consultations with key industry stakeholders, the report concluded 'The federated association and Development Officer structure is unlikely to deliver a sustainable and profitable industry long term'. The report claimed that while local contact with State Associations and Development Officers is perceived as important to the 'PR' face of the industry, this is not servicing the ***business needs*** of the industry.

The recommendations included a rationalisation of the NGIA operation and a restructure of the Development Officer network which is no longer able to service the broad needs of the industry, largely due to its scale and diversity. The report claimed that simply up-skilling the Development Officer Network will not provide the resource base to meet the current and future resource needs of the wider industry.

The report identified the following key issues:

- A perceived lack of leadership and vision for the industry
- A lack of unity in structure representing the industry
- Governance issues at a national and state level
- Poor communication – between the National peak body and the state/territory associations as well as between the states
- Political issues detracting from the real aim of industry growth
- A reactive attitude towards issues impacting the industry's operations
- A perceived lack of accountability and performance management of association staff at national and state levels
- An excessive amount of duplication at a national and state level including: publications, conferences, databases, training, staffing, membership benefits, etc.

**Table 2: Moko Report Recommendations**

| Category | 2005 Recommendation |
|---|---|
| **Vision** | • Revisiting of current Strategic Plan<br>• Clear articulation of 3-5 year vision<br>• Broaden membership base and introduce other areas – amalgamation/alliances |
| **The IAC** | • Review of structure and composition especially with regard to ensuring proper representation of pot levy constituents |
| **The National Executive** | • New composition that could include Independent Chairman, Industry- elected President, Accountant, Business Management Specialist, Media<br>• Executive roles are paid roles<br>• Directors have clear understanding of (national) roles and responsibilities |
| **The National Office** | • Amendment to constitution to reflect twin focus of membership and peak body representation |

| | |
|---|---|
| | • Appointment of CFO<br>• Establishment of national industry development fund<br>• Appointment of National Industry Manager (to manage Industry Consulting Group, Accreditation and Strategic Alliances)<br>• Creation of an industry consulting Group to service industry on such matters as accreditation, technical expertise, business advice, etc, at a proper business advisory level<br>• Appointment of 3rd party body to undertake accreditation assessments and calibration (reporting to National Industry Manager) – would be member of the Industry Consulting Group<br>• Maintenance of National Training Manager with mandate to roll out National Training Plan<br>• Maintenance of National Marketing Manager to liaise with industry, government, alliance partners and public – this role also takes on Sponsorship Manager duties<br>• Appointment of National Resource Manager<br>• Appointment of Resource Research Unit<br>• Appointment of National Membership Manager<br>• Appointment of in-house consultant<br>• Creation of NGIA Industry Support Centre (Industry Support Officer) |
| **The State Offices** | • Development of national model without State boundaries<br>• Establishment of National Foundation into which State Associations divest assets. The Foundation Board would consist of the present State Presidents and independent Directors<br>• Creation of Regional Offices (as demand justifies)<br>• Appointment of personnel to cover industry liaison, membership, events, communications and administration |
| **The Development Officer Network** | • Creation of Industry Consulting Group (specialist providers) – subsidised in the short term through creation of national industry development fund. |
| **Return on Investment** | • Review of Accreditation Scheme (not only ROI but also number of schemes) |

## Nursery & Garden Industry Development Needs Assessment (NY08014)

The Nursery Industry Development Needs Assessment was undertaken in mid 2009. The Needs Assessment Team (NAT) reviewed responses and formulated 4 key areas for industry investment in the future. The priorities were similar to existing programs being undertaken by the industry or proposed for the period 2010-2012.

There were some key issues that were raised by the NAT that were to be addressed by both the Industry Advisory Committee and also the Board of NGIA. These relate to

- Security and sustainability of the Industry levy
- Communications within the Industry regarding levy investment and project outcomes.
- Economic analysis of benefits of levy investment from future programs.

The technology utilised in this process will enable the industry to undertake a similar review every 2 years to ensure that levy payers are directly involved in the investment of funds in projects which are relevant to the market and business requirements.

The Industry Development Needs Assessment process has indicated the Nursery & Garden Industry (NGI) operates differently to many other HAL industries with:

- A well developed Industry Development Officer Network
- Utilisation of a high % of the industry levy funds
- Utilisation of State Associations to undertake service delivery for many aspects of R&D programs
- Program Managers located in NGI office and focussed solely on the NGI program.

**Table 3: Industry Development Needs Assessment Investment recommendations**

| NURSERY INDUSTRY DEVELOPMENT NEEDS | | | |
|---|---|---|---|
| **Research and Development** | **Marketing and Promotion** | **Training** | **Business Governance/Skills** |
| Climate change and impacts on industry | Industry Promotion for value of plants and the role plants have in being a solution for environmental aspects | Technical aspects of plant production | Biosecurity and plant traceability |
| Pests and diseases and controls | Positioning of the Nursery Industry as important in the minds of Governments and consumers | Industry workshops | Supply chain skills and processes |
| Biosecurity – pest risk plans | | Grower education regarding the need for compliance and governance | Plant labelling |
| Water issues for industry | | Greenlife careers and IR issues | |
| Benefits of plants to the environment | | | |
| **Overlaid by Technical Extension Network** | | | |

## Industry Development Officer Network for the Nursery and Garden Industry project (NY09010) – recent milestone reports

This Industry Development Officer project commenced in 2009 and runs until August 2012. The project is delivered via engagement contracts between NGIA and the State Associations.

The employment and direction of the resources engaged is managed by the States while NGIA sets reporting criteria and timelines for the delivery of outcomes and, therefore, can report on performance.

Each milestone report provides details of all field activities and actions undertaken to ensure key objectives are being undertaken. Reports are supplied by the States on a quarterly basis and consist of both a summary and detailed explanations of activities.

Full reports are held at NGIA office and contain extensive details of contacts and meetings. In the most recent milestone report one State failed to supply results in time so their numbers were not included and funding was therefore affected. In March 2012 a meeting was held with the IDO's during to discuss key issues and needs re training.

Key outcomes from NY09010 milestone report 106

- Economic conditions continue to impact on businesses support for the industry accreditation programs. Discussions are ongoing with Bunnings and State agencies to get the Farm Management System which comprises of NIASA, EcoHort and BioSecure HACCP to be accepted. This program has had increased focus due to the issues with Myrtle Rust, this will provide an economic driver due to controls on market access.
- The new 'FMS Tool kit" is being well accepted. Skills development is required for IDO's to fully utilise this in a selling environment.
- Over the reporting period there were 134 audits for NIASA with 259 businesses accredited. There has been a loss over the period due to businesses closing, merging or not meeting the industry standards.
- Businesses certified under EcoHort dropped to 103 with 78 audits conducted.
- BiosecureHACCP is receiving increased interest due to the driver of market access and being recognised by some States re Myrtle Rust management. While businesses are engaged, meeting the full requirements is taking time with 8 audits conducted and only 3 businesses being certified.
- 45 technical workshops were organised with 29 being delivered by IDO's. Most of these related to myrtle rust which was found in Victoria in January and subsequently there was a demand for identification/training in management etc.
- Contact visits numbered 587 with Production nurseries/Growing media Members and 303 with Non Members. IDO's also had 132 visits with the Retail sector.
- Supply chain issues are becoming more important as industry understands the complexity. This subject was addressed with 66 businesses during the period
- Issues relating to levy funded programs were the basis of 487 business contacts. How this has impacted the business is difficult to quantify and is the rationale behind a review of reporting templates.

- The network wrote 28 articles for State publications on technical matters and 12 articles for general Horticultural media.
- The IDO's were involved in two Nursery Papers during the period which are now included as part of the commercial publication – Hort Journal
- All IDO's continue to be involved at State level with Biosecurity issues relating to the Myrtle Rust incursion. This has now moved into a full Transition to Management project under the control of Federal Government and State Agencies.
- During the period of review Victoria was without an IDO and a lot of the issues relating to myrtle rust etc were undertaken by staff. A new IDO was appointed in July. In WA there have been changes in personnel due to part time role offered not suiting people selected.

As this project enters the final period there is greater focus on the reporting and quantifying the benefits derived from the activities undertaken. Changes in key personal engaged in WA and Victoria have meant that these States have been able to review how services are delivered. As part of the review undertaken for the development of the Industry Strategic Investment Plan NGIA are looking at the reporting format, utilisation of web based tracking and greater capture of gains information from industry stakeholders.

NGIA are working on the reporting system utilising a model developed in Qld for reporting activities based on SEQ Irrigation Futures. This will make greater use of data from the industry web portal used for FMS audits.

## Nursery Industry Training and Recognition 2009-2011 (NY09011) – final report

The IAC identified that 'business skills in the areas of environmental and bio-security awareness/compliance' are the critical area for the improvement in engagement between industry businesses and outcomes from projects. The increased requirements from Government into the area of plant Bio--security and interstate plant movements means growers/levy payers will need extensive training in these areas.

Survey results included in the Industry Needs Assessment showed that while 40% of businesses utilise the Industry developed training programs, this figure was 82% for large levy payers who recognise that for business efficiency staff development is essential.

NGIA considers that the option of using a combination the National and State based associations as a training and development channel is valid based on;

- They have a close working relationship with major growers and as such better understand their needs from a National perspective
- The training will have a level of consistency
- The process will support the total organisations approach to technology transfer
- It is critical that the combined organisations utilise the variety of training options that are available.

This project which has built on training investment over the past 5 years showed that industry training must be flexible and be adaptable to the changing market conditions. Due to a tough trading environment as a result of the Australia wide lack of business confidence the investment in training by business has dropped dramatically in the past 12 months. This needs to be reviewed before the development and contracting of the new program.

The Industry has continued to develop training modules for delivery at State level and now has a suite of training programs that cover some of the clearly identified gaps that were identified in the Needs Analysis undertaken in 2004.

New modules added to the suite over the past 12 months include Supply Chain and WaterWorks for the retail sector. As well as these industry has developed workshops for Myrtle Rust based on the industry management plan and specialised workshops for businesses to understand the carbon cycle and climate change.

The industry has sought out alternative funding for training and was successful in getting the WaterWorks for production being accepted under the Farm Ready for Climate Change Federal Funding program.

At a regional level specific State funding for training has been accessed for OH&S, Business Improvement/Supervision and evaluation of training methods was funded via AgriFood Skills During the total project period over 1264 hours of training was delivered via 148 workshops with attendance from 2698 industry stakeholders.

The key recommendations from this project are:

- Industry requires a training project to assist in uptake and awareness of key issues.
- Training delivery needs to be at a regional level so local issues can be identified, the delivery however needs to be structured and aligned to a National Program

- Industry needs to invest in converting current programs into an electronic format so they can be delivered via digital media.
- Development of training is to be included into research project development as has occurred with Industry Pest and Disease project NY11001
- Industry must develop follow up program to evaluate training impacts after the event
  - 6 to 12 months to enable accurate assessment of the value

## Funding Guidelines for NGI Training Workshops & Field Days 2011/2012

NGIA have produced detailed funding guidelines for the design and delivery of training workshops and field days. The primary objective of the training funding model is to ensure that state associations have access to funds to implement quality workshops and field days, thereby increasing the accessibility to skill development activities to employers and employees within industry.

A secondary, but important objective will be to continue to tackle issues relating to skill development activities, including:

- Duplication in activities
- Quality of training experience for participants
- Link to professional recognition for workshops attendance i.e. CNP.
- Difficulties in obtaining acceptable number of participants
- Inconsistent approach to the marketing and communication of workshops
- Anticipating costs of providing workshops and different skill development activities, establishing value for money.
- Eradication of possible "double-dipping" opportunities regarding government funding support

NGIA seeks to enhance and improve the training funding process for all parties involved. With this in mind, below is a summary of the significant areas of the Training Funding Guidelines. The 2011/2012 Guidelines have no additional changes to the previous Guidelines, with the exception of updating of the template documentation.

The "Workshop Report" has been converted to an "excel" document and includes the following:

- State Training plan for 2011/2012 required in advance
- Changes to R & D funding allowance
- Changes by HAL to the percentage of VC for workshop delivery costs
- Improved reporting of workshops outcomes
- Mandatory documentation to be included in all initial funding and reporting
- Limits around training programs already receiving government support, whether state or federal, will be looked at on a case by case basis
- Quality of presenters and use of NGI employee knowledge and skills in technical topics
- Formal timelines for funding and reporting of workshops to gain funding – reporting must be completed (including all mandatory attachments) by the state association no more than 30 days post the training event. Reports older than 30 days will not be processed.
- First Aid Training is no longer subsidized via the HAL funding allocation. This is due to the public availability of these types of training courses. All state associations were made aware of this in late 2009.

## Nursery & Garden Industry Strategic Investment Planning Meeting – November 2011

The Nursery & Garden Industry Strategic Investment Planning Meeting, November 2011, had an extensive list of participants representing a broad cross section of stakeholder interests and the meeting outcomes formed the basis of the current strategic investment plan. The meeting highlighted the

The meeting developed a list of what was 'hitting the mark' and what was 'missing the mark'.

**What is hitting the mark?**

- The IDO network is providing a useful service, but can be improved further
- Quality and range of R & D work undertaken i.e. iTree
- Improvement in production skills through the adoption of best practice
- Farm Management System
- Accreditation standards, including Ecohort and Biosecure
- Business professionalism and marketing
- Camaraderie among industry members compared to elsewhere ("We get on")
- Technical training
- Trade register and publication of nursery papers
- Awards process (business improvement)
- Outcomes from urban greening investments
- Outcomes from water investments
- Annual Industry conference
- Good collaboration between states to move forward on water issues
- Gap analysis: what TAFE has done nationally sent to states for delivery.

**What is missing the mark?**

- Communication
    - Communication based on up-to-date data (new data hard to find)
    - Information is not getting to growers. Lines of communications are fragmented
    - Communicating to Government and other influencers. General education of all levels of government is needed
    - External communications – using the information gained through R&D and delivering in a form advantageous to industry.
    - Stakeholders' understanding and access to information, including information on industry programs and industry benefits
- Extension and training
    - IDO focused on individual business not growing the overall market
    - Skills of the IDO's need broadening to better cover the range of industry priorities
    - Generational education - Consumers and nursery people
- Marketing

    - Life is a garden (LIAG) and Plant Life Balance (PLB) not a good delivery. Trying to do too much for too many. Lack of resources available to be effective.
    - Market data collection / industry statistics (production/economic)
    - Consumer awareness requires constant attention
    - Need for greater involvement of / collaboration with the retail sector
- Governance
    - Communicating to the industry how the levy is raised and used. Levy payers meetings at conferences are not well attended
    - Evaluation on investment – where is the money going?
    - Dysfunctional Industry structure
- Other
    - R & D capacity is limited and not well dispersed
    - Increase plant value – all sectors
    - Industry Profitability

## Nursery Production Farm Management System – Cost Benefit Analysis July 2012

In July 2012, AgEconPlus conducted an independent costs benefit analysis of the Nursery Production Farm Management System (NPFMS), which include: Nursery Industry Accreditation Scheme Australia (NIASA) – a Best Management Practice program; EcoHort – an Environmental Management; and BioSecure HACCP – a biosecurity program which helps assess pest, disease and weed risks.

Three benefit cost analyses were completed: The value of the farm management system to individual businesses; the farm management system's value to the whole nursery industry; and, benefits to the broader Australian community.

While not all nursery businesses that invest in a NPFMS receive a financial return, many received a substantial financial return from new markets accessed, reduced stock wastage, management efficiencies, labour and chemical savings. Other less easily quantified benefits include improved access to technology, risk reduction, brand building, staff culture, continuous improvement and ease of compliance with environmental regulations. Business costs include both capital expenses and annual operating outlays with a formal benefit cost analysis showing a positive return on business investment with a five year payback period.

The industry investment in the NPFMS to date is estimated to be almost $1.3 million. Assuming around half of those who adopt the farm management system receive a financial benefit, the farm management system has delivered a significant return for industry – net present value of $71.22 million with a benefit cost ratio of 8.01 and a return on investment of 40.5%. A more optimistic assumption that 75% of businesses receive a financial benefit results in a benefit costs ratio of 12.02 and a 48.3% return on investment. Even if only 25% of adopters received a financial benefit from the NPFMS, additional industry revenue more than covered industry investment costs.

Australian community benefits from the NPFMS were identified and analysed across the environmental, social and economic 'triple bottom line'. The most important environmental benefits realised were improved biosecurity (less chance of invasive weeds and pests) and improved chemical management. Community social benefits included increased demand for gardening with associated positive spin offs for health, social and visual amenity. Community economic benefits included employment and regional development.

### NPFMS production nursery financial benefits

The cost benefit analysis provides substantial justification for industry investment in the NPFMS. Capital expenses required by individual production nurseries to gain NPFMS status varied from zero to $150,000, with the average expense being $50,000. The annual operating costs for individual production nurseries to maintain NPFMS status varied from $465 to $50,000, with the average cost being $10,000.

The major financial benefits for productions nurseries from NPFMS were reduced throw out rates and access to new markets, both of which result in extra plant sales. On average, the throw out rate was reduced from 5% to 3% which provided an average $25,000 benefit per business. Even more significantly NPFMS certification enabled a marketing advantage and

enhanced reputation, resulting in a $60,000 average benefit per production nursery business. Other financial benefits identified by NPFMS production nurseries included management efficiencies and savings from reduced labour, chemical, electricity and water usage.

The average financial benefit per NPFMS production nursery was $106,000 with a maximum being $702,000 and minimum of $0. The average return on investment for production nurseries was calculated at 31% over 10 years.

The less tangible benefits for production nurseries from the NPFMS included greater access to an IDO, risk minimisation, enhanced reputation, improved staff culture and continuous improvement and environmental best practice.