

STRATEGIC PLAN

PISTACHIO GROWERS' ASSOCIATION INC (PGA)

2021-2026

V3. 4th February 2021

PREPARED BY: Pistachio Growers' Association Inc

DATE: 4th February 2021

VISION

“A highly profitable industry that is sustainable and rewarding for existing growers and attractive to new growers.”

ASPIRATIONS

By 2026, the Australian Pistachio Industry will

- continue to be informed, innovative, profitable and environmentally sustainable,
- continue to produce and market consistently high-quality pistachios that are enjoyed and sought by educated consumers,
- continue to meet a strongly expanding market demand that recognises the great flavour and health benefits of Australian pistachios
- succeeded through the transition of an expanding industry from a near total focus on the domestic market to also succeeding in the export market.

MISSION STATEMENT

“To produce sustainable yields of high-quality pistachio nuts that excites consumers and satisfies food manufacturers both in Australia and overseas.”

OBJECTIVES

1. Maximise sustainable yields of high quality pistachio nuts from Australian orchards through improved production tools.
2. Maximise consumer perceptions of Australian pistachio nuts by constantly improving appearance and taste in the orchard as well as by promoting health benefits in the market place.
3. Maximise returns to Australian pistachio growers by constantly improving efficiencies in the distribution channel from the orchard to the consumer.

KEY RESULT AREAS

1. Maintained high profitability of Australian pistachio nut producers.
2. Maximised yield, size, appearance and taste of Australian Pistachio nuts.
3. The availability of best practice, sustainable production methods to growers.
4. Efficient dissemination of results from industry supported research and development to growers.
5. Well resourced industry structures.

RATIONALE

Australian pistachios nuts will remain under competitive market pressures from Iranian and California imported products. The Australian Pistachio Industry needs: -

- ✚ To constantly improve the yield and quality of Australian pistachio nuts to match and exceed world standards and implement tools to achieve this throughout the supply chain.
- ✚ To adopt and maintain sustainable production systems.
- ✚ To maintain pest and disease management to ensure yields and quality are maintained and improved.
- ✚ To continue to develop and implement innovative processing and marketing opportunities.
- ✚ To increase consumer awareness of the health benefits of pistachios.
- ✚ To expand and service the domestic market for Australian pistachio nuts.
- ✚ To identify and service niche export markets that will value the fresh taste of Australian pistachios.

As the Australian pistachio industry structures and R&D funds become more sustainable as grower numbers and contributions increase the Australia Pistachio Industry: -

- ✚ Will continue to attract new growers and expand the production base.
- ✚ Will continue to maintain a strong grower-based industry association.
- ✚ Will continue to maintain funding to support Pistachio Growers' Association Inc R&D project investments.
- ✚ Will continue to remain a cooperative industry that readily exchanges information between its members
- ✚ Will continue to maintain a unified marketing approach.

INDUSTRY KPI's

The Pistachio Growers' Association Inc believes the following broad industry Key Performance Indicators (KPI's) will be achieved from the implementation of this Strategic Plan.

- ✚ 75% of contributor mature orchards achieving an average yield of 7.5 kg/female tree (3,000 kg/ha).
- ✚ Increase in nut size.
- ✚ Reduction in staining, particularly dark stain.
- ✚ Reduction in the percentage of blanks.

- ✚ An increase in new plantings of at least 5% per annum of the total plantings.
- ✚ By maintaining the unified selling base, superior grower returns will be achieved over price returns to Californian growers.

BACKGROUND INFORMATION

History

Commercial pistachio growing commenced in Australia in the early 1980's following exploratory research and a successful breeding program by CSIRO at Merbein in NW Victoria. The new variety *Sirora* was released in 1980. A range of male selections that flower synchronously with *Sirora* were also made available to the young industry by CSIRO. When grown grafted to compatible rootstocks, which were identified by CSIRO and the industry, *Sirora* and the male selections have enabled the industry to develop within the constraints of the climate and soils of the River Murray valley, where most large orchards are now located.

Current Farming Situation

In 2020 there are about 25 producing pistachio growers with a total area planted of about 1,000 hectares. There are also about 25 new, non-producing, growers. There is now a total of about 2,200 ha of bearing and non-bearing trees.

The industry has developed a successful growing model for Australian conditions. The climate and soils have proven satisfactory for pistachio nut production.

All orchards are presently privately owned. Orchards are usually >10 hectares, the minimum size for a viable orchard. There are very few small "hobby" farmers.

The industry has fully recovered from a fungal epidemic of 2011. New plantings are proceeding at 200 ha per annum in 2020 and this rate likely to remain steady or perhaps even increase

Production

This Plan deals with the production and marketing of dried pistachios from 2021 to 2026.

Current production averaged 2,400 tonnes per annum across the 2019 - 2020 off/on crops. The expected production as the new orchards come into production is shown in Chart 1. Trees already planted and ordered from nurseries for the next three years will produce 12,000 tonnes in 2030.

There is also a small market for fresh pistachios fruit (nuts in fleshy hull). Currently sales are estimated at 20 - 30 tonnes from 10 to 15 small growers selling independently of each other through the fresh fruit & vegetable markets.

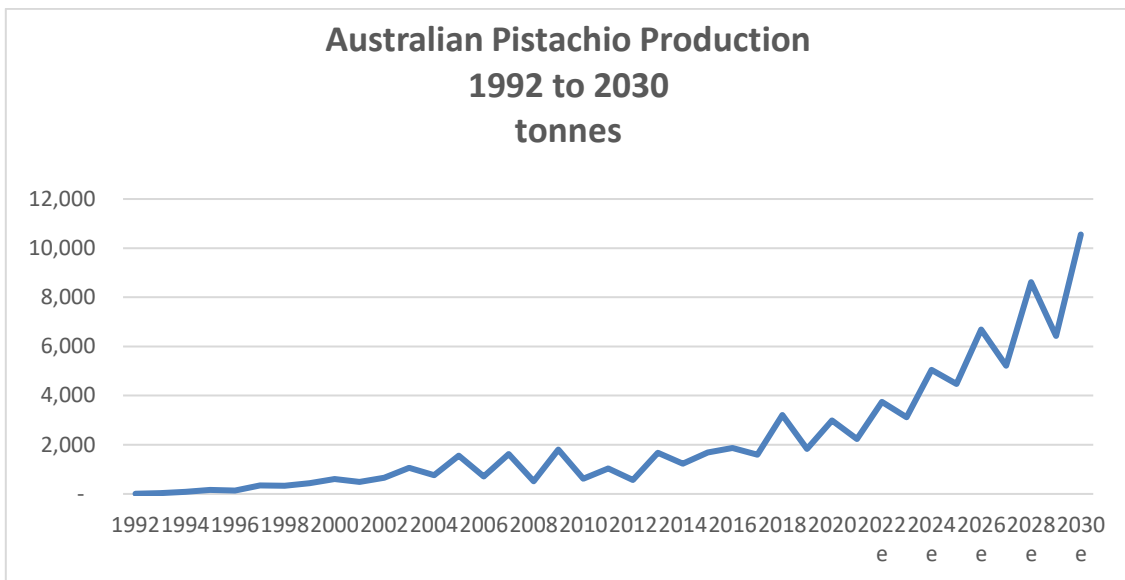


Chart 1: Source: APPC records and industry information to 2020. APPC projections to 2030.

Production Efficiency

Australian yields have continued to improve. Australian orchards now achieve an average of about 3,000kg/ha, over the 2-year on/off cycle, peaking at over >6,000kg/ha in an on-crop year.

Further improvement is possible – the best Californian orchards produce over 6,000kg/ha in an on-crop year. Good Californian orchards average 3,500kg/ha.

Market

Most pistachio production world-wide is directed at the consumer snack food market as inshell. The snack food market for pistachios effectively also buys the shells at the same price. About 85% of the Australian crop is sold into the snack food market.

There is a growing ingredient market that is supplied by the kernels obtained by shelling the non-split and reject in-shells. The Australian *Sirora* variety has relatively few non-splits compared to most other commercial varieties (<10% compared with ~15 - 20% in Iranian and Californian varieties). Worldwide, the kernel market is expanding even faster than in-shell consumption but returns to growers still favour the clean inshell product rather than the closed and stained nuts shelled for kernels.

Current (FY2020) Australian consumption is about 4,200 tonnes per annum. This represents a compound growth of about 4.2% per annum since 2000. There is scope for continued growth. The nut heart health message is steadily becoming better known.

Australian pistachios must compete with imports. In FY2021 Australian supply will satisfy about one half of total domestic demand (Chart 2). The projections seen in Chart 2 assume domestic consumption growth at only 2% per annum from 2021 forward. Supply of Australian grown pistachios will approximate domestic demand from about 2025.

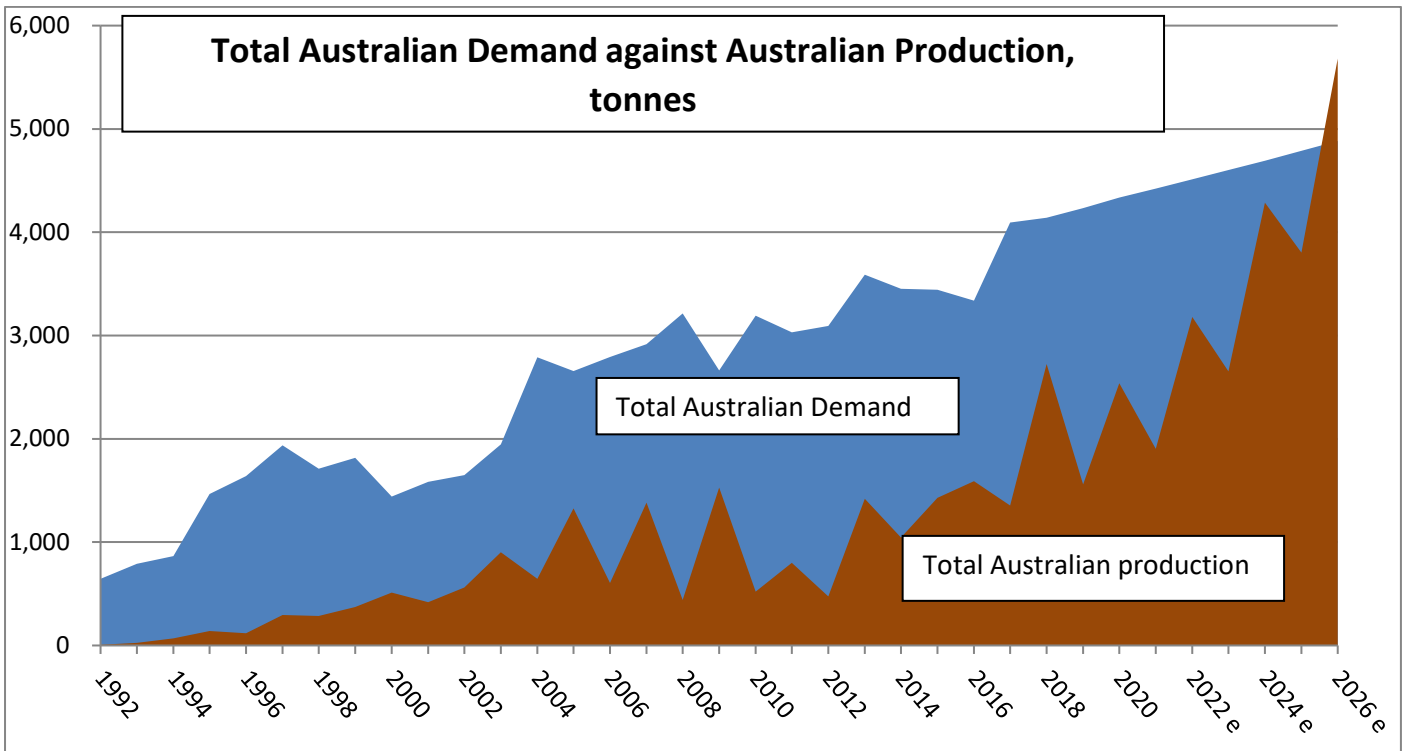


Chart 2: Source: APPC and Australian Bureau of Statistics. Actual data to 30th June 2020, estimated data for 2021 onwards. Note: Australian production is the quantities supplied to the market, i.e., the gross harvested less the loss of shells from the shelling of closed and stain shell.

Australian production has been largely directed at the domestic market. Australian domestic prices reflect the landed cost of imported pistachio nuts and therefore the return to growers exceeds what could be achieved through exporting the Australian product to Europe or Asian markets.

AUSTRALIAN PISTACHIO INDUSTRY

OVERALL INDUSTRY STRATEGIES

2021 to 2026

OVERALL AUSTRALIAN PISTACHIO INDUSTRY KEY STRATEGIES AND ACTIONS

Strategy 1	MARKET OPPORTUNITIES
Actions	<ol style="list-style-type: none"> 1.1 Further develop the domestic market sector 1.2 Promote and market quality Australian nuts to the consumer 1.3 Maintain the highest food quality standards. 1.4 Promote Country of Origin Labeling to maximise the value of high-quality Australian pistachios 1.5 Ensure that the health professionals and other key influencers promote pistachios as a part of a healthy diet 1.6 Identify potential niche export markets that may provide price premiums for Australian pistachios. 1.7 Maintain a cooperative and coordinated marketing strategy across the industry 1.8 Expand the value adding opportunities
Outputs	<ul style="list-style-type: none"> • Market strategy for prioritised market sectors based on ongoing market intelligence • Confidential information that supports the development of new market opportunities • Relevant data packages for the industry • Consumer research data to guide product development • Price premium for Australian grown pistachios in domestic and export markets • A range of new pistachio products
Industry Outcomes	<ul style="list-style-type: none"> • Increased domestic consumption of Australian pistachios. • New and existing market sectors for Australian pistachios. • Customer confidence in Australian pistachios maintained and increased • Customers with access to a range of new, high value products.

Strategy 2	PRODUCT VALUE
Actions	<ul style="list-style-type: none"> 2.1 Maintain accredited growers and processors 2.2 Maintain and promote quality supply chain management 2.3 Undertake regular economic benchmarking across the Australian pistachio industry
Outputs	<ul style="list-style-type: none"> • Information packages and educational materials • A quality certification program using 3rd party quality auditors
Industry Outcomes	<ul style="list-style-type: none"> • Australian pistachios maintain their high-quality reputation in the Australian domestic market • Minimum quality standards and consistent protocols so that product meets specifications

Strategy 3.	EFFICIENT AND SUSTAINABLE PRODUCTION
Actions	<p>3.1 Review nutritional requirements and standards for pistachio trees under Australian conditions.</p> <p>3.2 Promote optimum orchard nutrition</p> <p>3.3 Assist producers to manage climate variability</p> <p>3.4 Review and promote water requirements, application and availability to achieve water use efficiencies</p> <p>3.5 Implement effective pest and disease management</p> <p>3.6 Promote efficient and effective nut harvesting, hulling, drying and storage</p> <p>3.7 Establish, promote and benchmark efficient production costs to reduce unit production costs</p> <p>3.8 Ensure the development and implementation of best practice mechanisation</p> <p>3.9 Identify and promote suitable varieties and rootstocks</p> <p>3.10 Summarise key pest and disease knowledge and determine existing knowledge gaps</p>
Outputs	<ul style="list-style-type: none"> • Best practice and technologies for: <ul style="list-style-type: none"> ○ water use, ○ pest and disease management ○ nutrition • Best practice soil health management technologies • Precision horticulture systems • Technologies to enable high moisture pistachios to be efficiently hulled and dried with no detriments to nut quality • Report on assessment of pistachio production from climate variability and climate change scenarios • Reviewed and evaluated alternate uses for processing waste, including financial assessment of alternatives • Rootstock and cultivar propagation protocols • A secure pistachio germplasm repository • A source of highest health status, true-to-type budwood. • Importation and trial of new varieties and rootstocks • Pest management information in appropriate formats for grower use

Industry Outcomes	<ul style="list-style-type: none">• Sustainable yield gains for Australian pistachio orchards from improved, efficient production techniques and/or new orchards.• Industry average yield increased (average derived from industry statistics)• Water use efficiency enhanced meeting recognised industry and horticultural best practices• Yield losses from pest and disease pressures reduced• Improved processing efficiency• Industry practices enhance improvements in soil biology• Australian Pistachio Industry's carbon and environmental footprint reduced• Sourcing world leading rootstocks and varieties to build on the current Australian the rootstock/variety options• 7.5 kg/female tree {3.0 tonnes dry, in-shell nuts per hectare (averaged across 2 seasons)} achieved by 75% of Australian growers
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Strategy 4.	SUPPORTING OPERATING ENVIRONMENT
Actions	<p>4.1 Establish and undertake regular reviews of an Australian Pistachio Industry Strategic Plan</p> <p>4.2 Establish and maintain an annual Research and Development investment plan.</p> <p>4.3 Promote the adoption of effective Food Safety Programs in orchards and throughout the supply chain</p> <p>4.4 Develop and maintain effective relationships with Government and Regulators</p> <p>4.5 Regularly undertake industry data collection to underpin industry statistics</p> <p>4.6 Undertake appropriate Industry advocacy as and when required</p> <p>4.7 Develop, maintain and promote effective industry biosecurity by regularly updating the Nut Biosecurity Plan to determine exotic pest and disease risks and developing protocols to address them</p> <p>4.8 Develop and implement on-farm biosecurity and orchard sanitation programs</p> <p>4.9 Maintain and/or improve protocols for testing imported seed, budwood and trees for exotic and endemic pests and diseases in association with DAWE</p>
Outputs	<ul style="list-style-type: none"> • Strategic Plan for the Australian Pistachio Industry developed and reviewed in Years 2 and 5) • Project briefs for all priority strategies within each objective • R & D annual investment plan • A best practice management program that includes critical control points and guidelines for managing biological risks across the entire supply chain • Biosecurity manual for the pistachio industry • Australian Pistachio Nut Industry biosecurity emergency response management program • Contribute the pistachio exotic pest and disease surveillance and reporting information to a national database • Consistent, up-to-date protocols for testing imported seed, budwood and trees for exotic and endemic pests and diseases in association with Biosecurity Australia. • Maintain and publish accurate Industry statistics • Adequate industry resources and capacity to support future industry development and expansion
	<ul style="list-style-type: none"> • Industry consensus on strategic direction and support for future industry growth as detailed through the Pistachio Strategic Plan

Industry Outcomes	<ul style="list-style-type: none">• R&D investment aligned with industry growth and strategic goals.• The R & D projects commissioned achieved a strong Return on Investment• Food safety issues addressed and minimised• Australian pistachio nuts have a positive food safety reputation• A more knowledgeable and biosecure pistachio industry• If any incursion occurrences, damage is minimised
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Strategy 5.	TECHNOLOGY TRANSFER
Actions	<ul style="list-style-type: none"> 5.1 Develop and maintain effective extension and technology transfer 5.2 Maintain Best Practice Grower Groups 5.3 Develop and maintain effective and efficient communication processes 5.4 Maintain and enhance a strong human resource (members) base 5.5 Support ALL growers – small and large 5.6 Survey stakeholders to evaluate technology transfer
Outputs	<ul style="list-style-type: none"> • Extension publications, products and services and diverse learning opportunities (including fact sheets, field days, workshops and training sessions) • Website that holds pistachio research reference material • Project status and output updates • Final project reports on the PGAI website • Stakeholder survey result summaries • Analysis of technology transfer • Training programs for industry stakeholders • International study trips
Industry Outcomes	<ul style="list-style-type: none"> • High level uptake of R&D outcomes by industry • Enhanced skills and Industry capacity

Strategy 6.	MANAGE THE INDUSTRY EFFECTIVELY
Actions	<ul style="list-style-type: none"> 6.1 Maintain strong and effective industry leadership 6.2 Maintain a well-resourced industry organisation 6.3 Represent and develop Biosecurity procedures for Industry 6.4 Maintain a strong voice on Industry Issues 6.5 Collaborate with other like Industries as deemed necessary 6.6 Ensure the organisation and industry remain legally (and regulatory) compliant
Outputs	<ul style="list-style-type: none"> • Expanded communication initiatives (including website updates and e-newsletters) • Annual communication effectiveness survey • Informed decision-making throughout the pistachio supply chain through access to timely and relevant information • Active member of Australian Nut Industry Council (ANIC) and NFF Horticulture Council (through ANIC membership)
Industry Outcomes	<ul style="list-style-type: none"> • Higher proportion of stakeholders accessing current information (e.g., From the PGA's website) • Informed and engaged stakeholders across the value chain • Conducive environment to pursue sustainable, profitable pistachio farming in Australia

AUSTRALIAN PISTACHIO INDUSTRY

KEY R, D & E INVESTMENT STRATEGIES

2021 to 2026

AUSTRALIAN PISTACHIO INDUSTRY KEY R, D & E STRATEGIES AND ACTIONS

Strategy 1	Nut Quality
Actions	<ol style="list-style-type: none"> 1.1 Develop and maintain programs that ensure quality nuts from producers 1.2 Work to mitigate nut staining 1.3 Manage pests and diseases 1.4 Assist in the management of Aflatoxin 1.5 Promote quality supply chain management 1.6 Determine and promote appropriate nut harvesting and storage techniques 1.7 Work to minimise the occurrence of blank nuts (parthenocarpic fruit) 1.8 Achieve appropriate nut size to satisfy consumer preference
Outputs	<ul style="list-style-type: none"> • An Industry-agreed pistachio quality accreditation program • Sufficient know-how and support for the production of highest quality nuts by the majority of growers • Increased industry overall production of quality pistachio nuts
Industry Outcomes	<ul style="list-style-type: none"> • Australian Pistachio Industry maintained its high-quality reputation • Continual improvement in appearance and consumer appeal of Australian pistachio nuts to meet and exceed consumer expectations. • Higher grower returns through increased overall production of highest quality pistachio nuts

Strategy 2	Pest and Disease Management
Actions	<ul style="list-style-type: none"> 2.1 Establish nut stain triggers and implement management and control programs 2.2 Investigate fungal disease epidemiology and triggers to implement management and control programs 2.3 Ensure appropriate and legally permitted crop protection products are available 2.4 Investigate aflatoxin triggers and implement management and control programs 2.5 Maintain insect orchard monitoring, management and control programs 2.6 Implement an effective industry-wide biosecurity plan
Outputs	<ul style="list-style-type: none"> • Pest and disease information that growers can incorporate into management and control decisions • Required crop protection products are available to producers • National pistachio exotic pest and disease surveillance and reporting network • Pistachio Biosecurity Plan • On-farm Biosecurity manual for pistachio growers
Industry Outcomes	<ul style="list-style-type: none"> • Australian pistachios nuts maintained their high-quality reputation • Continual improvement in appearance and consumer appeal of Australian pistachios nuts met and exceeded consumer expectations. • Industry protected from biosecurity threats

Strategy 3	Rootstocks and Scions
<p>Actions</p>	<p>3.1 Ensure premium scions are available to producers</p> <p>3.2 Ensure suitable rootstocks are available to producers</p> <p>3.3 Promote nursery programs such that the highest health status budwood and/or trees are available</p> <p>3.4 Ensure access to appropriate pest and disease resistant rootstocks</p> <p>3.5 Maintain the current industry germplasm collections</p> <p>3.6 Collate pollination information including timing as it relates to nut quality</p> <p>3.7 Maintain rootstock trials at relevant industry/departmental repositories</p> <p>3.8 Ensure Kerman can perform as the second industry variety</p>
<p>Outputs</p>	<ul style="list-style-type: none"> • Security of current industry germplasm repository • Well-structured nursery trees free of pests and pathogens. • Budwood programs that ensures the supply of clean budwood to the industry • Agreed orchard management program established and implemented for Kerman production in Australia
<p>Industry Outcomes</p>	<ul style="list-style-type: none"> • Australian pistachio orchards remained highly productive: • Losses from pests and diseases reduced • Improved processing efficiency • The Australian Pistachio Industry provided with future variety and rootstock options. • Kerman performs up to industry expectations.

Strategy 4	Orchard Management
Actions	<ul style="list-style-type: none"> 4.1 Determine and undertake effective R, D & E 4.2 Determine, promote and benchmark the implementation of effective and efficient production costs 4.3 Encourage the implementation of best practice 4.4 Determine optimum orchard nutrition and promote appropriate programs to growers 4.5 Assist growers to manage orchards under climate variability 4.6 Ensure industry has access to the required water resources and encourage the implementation of efficient irrigation 4.7 Establish appropriate tree structure/form for Australian conditions to improve annual yields 4.8 Monitor chill and heat accumulation utilising relevant models 4.9 Promote the utilisation of relevant precision farming techniques 4.10 Determine the Australian Pistachio Industry's carbon and environmental footprint
Outputs	<ul style="list-style-type: none"> • Best practice technologies for water use, pruning, orchard management, pest and disease management and nutrition • A range of approved farm chemicals for use in growing pistachios. • Best practice technologies for maintaining and improving soil health • Report on an assessment of pistachio production against variable climate and climate change scenarios • Annual Chill accumulation reports distributed • Increased capabilities of orchardists to optimise water use to achieve maximum returns • Report on the Australian Pistachio Industry's carbon and environmental footprint
Industry Outcomes	<ul style="list-style-type: none"> • Sustainable yield gains for Australian pistachio orchards that came from improved, efficient production techniques and new orchards • Achieved target industry yields (derived from industry statistics) • Water use efficiency enhanced meeting industry and horticultural best practice • Losses from pest and disease reduced • Improved processing efficiency • Industry practices enhanced promotion of soil biology

	<ul style="list-style-type: none"> • Australian Pistachio Industry's has a sustainable carbon footprint
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Strategy 5	Technology Transfer
Actions	<ol style="list-style-type: none"> 5.1 Maintain industry based and managed technical resources 5.2 Establish and maintain Best Practice Grower Groups 5.3 Develop and maintain effective, efficient communication processes (e.g., technical bulletins, website, manual, grower meetings) 5.4 Maintain a strong Australian Pistachio Industry grower base through membership of the PGAI 5.5 Regularly undertake industry data collection to ensure accurate industry statistics 5.6 Utilise international, national and local specialists/experts
Outputs	<ul style="list-style-type: none"> • Extension publications, products and services, including fact sheets, field days, workshops and training sessions • Project updates included in newsletters • Final project reports (available on the PGAI website) • Regular survey of stakeholders to evaluate technology transfer • Analysis of technology transfer • Secured and expanded role of the Pistachio Research Field Officer/Technical Officer
Industry Outcomes	<ul style="list-style-type: none"> • Improved resource use and capabilities through technological solutions and skills development • High level uptake of R & D outputs by industry • Industry capacity enhanced through increased skills development

Strategy 6	Manage the Industry effectively
Actions	<p>6.1 Maintain strong and effective R, D & E leadership and a strong representative voice on industry issues and needs</p> <p>6.2 Maintain a well-resourced industry-based R, D & E Committee</p> <p>6.3 Adopt and maintain an effective, efficient voluntary contribution collection from ALL producers</p> <p>6.4 Collaborate with other like industries</p> <p>6.5 Undertake regular economic benchmarking across the Australian Pistachio Industry</p>
Outputs	<ul style="list-style-type: none"> • Implemented R, D and E components of the Strategic Plan • R&D sub-committee maintained and resourced • Disseminated industry information, data and statistics • Communicated initiatives reaching ALL growers through appropriate mechanisms • Leveraged effective utilization of resources through participation in appropriate and relevant multi-industry projects • Engagement of appropriate resources • Improvement in the overall return on investment (ROI)
Industry Outcomes	<ul style="list-style-type: none"> • A conducive environment to pursue sustainable, profitable pistachio farming in Australia • Increased supply that satisfied the Australian Retail demand

TABLE 1: SUMMARY OF R&D PRIORITIES DETERMINED BY URGENCY AND IMPACT

	High \$ Impact Action will have measurable \$\$ returns to industry	Medium \$ Impact Action may have measurable \$\$ returns to industry	Low \$ Impact Action unlikely to have measurable \$\$ returns to industry
High Urgency /Importance Action needed in next 12 months	Fungal diseases Marketing Maintaining unity in domestic market Pruning to mitigate alternate bearing Monitoring chill and mitigate the impact of lack of chill. Communication Growers Web site Technical information transfer Development of Kerman as a second variety	Nutrition requirements for <i>Sirora</i> Nut size Shell damage Kernel fill	
Medium Urgency/Importance Action needed within 3 years	Water - When - How much Kernel fill, splitting and blanking Alternate bearing	Review and update <i>Sirora</i> Leaf analysis standards Pruning/training <i>Xanthomonas</i> Aflatoxin Global warming	
Low Urgency/Importance Action needed within 5 years	Insects	Marketing Fresh Pistachios Develop coordinated fresh pistachio fruit market. Investigate the export of fresh pistachio fruit. Trees Budwood Source	Trees New varieties Alternative rootstocks Marketing Export