

STRATEGIC PLAN 2015-2020

Version 1: 26 MAY 2015

AUSTRALIAN
ABALONE
GROWERS
ASSOCIATION
INC.

Contents

FOREWORD.....	2
ACKNOWLEDGEMENTS.....	2
1. STRATEGY FRAMEWORK.....	3
KEY VALUES.....	3
STRATEGIC GOALS.....	4
RD&E INVESTMENT PRIORITIES.....	5
2. INDUSTRY CONTEXT.....	6
BACKGROUND.....	6
ABALONE CONSUMPTION AND MARKETS.....	7
HARVEST & SUPPLY.....	8
Regulatory Framework.....	10
FARMED ABALONE SUPPLY CHAIN.....	11
INDUSTRY LEADERSHIP.....	12
INDUSTRY PARTNERSHIP AGREEMENT.....	13
3. RD&E PROGRAM.....	15
INVESTMENT COLLABORATION.....	15
FUNDING THE INVESTMENT.....	16
INVESTMENT CAPACITY.....	17
KEY INVESTMENT AREAS.....	18
INVESTMENT AREA 1. NATIONAL BIOSECURITY.....	19
INVESTMENT AREA 2. PRODUCTIVITY GAIN.....	20
INVESTMENT AREA 3. ANIMAL NUTRITION.....	21
INVESTMENT AREA 4. SUSTAINABLE FARMING SYSTEMS.....	22
INVESTMENT AREA 5. ANIMAL HEALTH.....	23
INVESTMENT AREA 6. HUMAN CAPACITY.....	24
INVESTMENT AREA 7. AAGA - AN EFFECTIVE NATIONAL BODY.....	25
INVESTMENT AREA 8. MARKETING FARMED ABALONE.....	26
FORECAST INVESTMENT PLAN.....	27
Glossary.....	28

FOREWORD

Aquaculture is the world's fastest growing primary industry. Abalone farming in Australia has recently emerged from a nascent stage to be a profitable industry producing abalone of exceptional and consistent quality. Market demand for our product is strong with farm gate prices equal to and often exceeding beach prices for diminishing wild caught abalone.



We plan for and anticipate that Australian farmed abalone production will double and then double again in the next 5 and 10 years. Economies of scale and an increasing level of sophistication and efficiency of production practices will result in greater profitability. Furthermore this growth will ensure that our industry continues to stimulate the economy in local rural communities whilst providing more and better quality employment opportunities.

To achieve this growth we need to attract further investment, overcome some regulatory barriers and invest further in research and development to ensure the improvements to production efficiency and the continued safety, quality and integrity of the abalone we produce. To these ends AAGA's roles are to represent and advocate on behalf of our industry to government and the broader community; and to coordinate our research and development activities. This document focusses heavily on the latter especially on developing an Industry Partnership Agreement (IPA) with the Fisheries Research and Development Corporation, (FRDC).

This is living document, scribbling in the margins is encouraged.

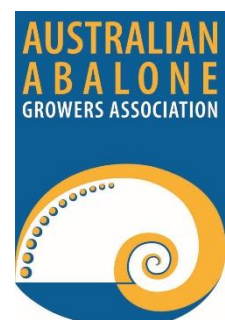
Nicholas Savva

Executive Officer, AAGA.

ACKNOWLEDGEMENTS

In developing this Strategic Plan the Australian Abalone Growers Association acknowledges the input and support from the following:

- Fisheries Research and Development Corporation (FRDC) for funding
- Australian Abalone Growers Association Members for input
- Ridge Partners for contribution to the development of the Plan.



1. STRATEGY FRAMEWORK

Australian Abalone farmers collectively contribute about 1000 tonnes to a global abalone supply (wild catch and aquaculture) of ~111,000 tonnes. As they grow their sector they face significant challenges and opportunity over the coming decade to 2025. This Plan aims to position the sector to make best advantage of its choices over this long term horizon.

AAGA Members represent >90% of Australian farmed abalone production. They have developed this Plan during a six month process of consultation regarding enterprise and sector aspirations, trends and strategic options. Although both the sector and AAGA have a relatively brief history, the Members have confirmed a clear shared understanding of their purpose and strategic goals for the next decade.

A Members' planning workshop in December 2014 considered the key strategic issues, risks and goals for farmed products in global and domestic markets, the priorities for creating and preserving value along the chain from hatchery to market, and the expectations of investors and the community regarding the performance of businesses in the aquatic environment. AAGA members identified their organisational Vision, Mission and key Values for outcomes to be achieved over the next decade.

This Plan also draws a clearer focus on realistic action and investment plans that Members seek, especially over the next five years to 2020. The Plan will be reviewed in 2020.

This Plan draws these strategic themes, priorities and actions together in a document that AAGA will implement on Members' behalf. The Plan also provides the sector and Members with a sound and united platform to leverage their RD&E investment via a new Industry Partnership Agreement (IPA) with the FRDC.

2025 Vision & Mission

Australian Abalone will be the preferred abalone across world markets. Farmed Australian Abalone from AAGA Members will:

- Be recognised and sought after across Global Markets,
- Be grown in and harvested from Sustainable Farming Systems,
- Be produced by farms whose Return on Investment (ROI) will be in the top quartile of all Australian Aquaculture producers.

KEY VALUES

AAGA aims to promote ethical and responsible abalone farming for profit.

STRATEGIC GOALS

The farmed abalone industry is a young and emerging aquaculture sector with bright market prospects and strong growth aspirations. Eight strategic goals have been identified by AAGA Members to be achieved over the next 5 year planning horizon.

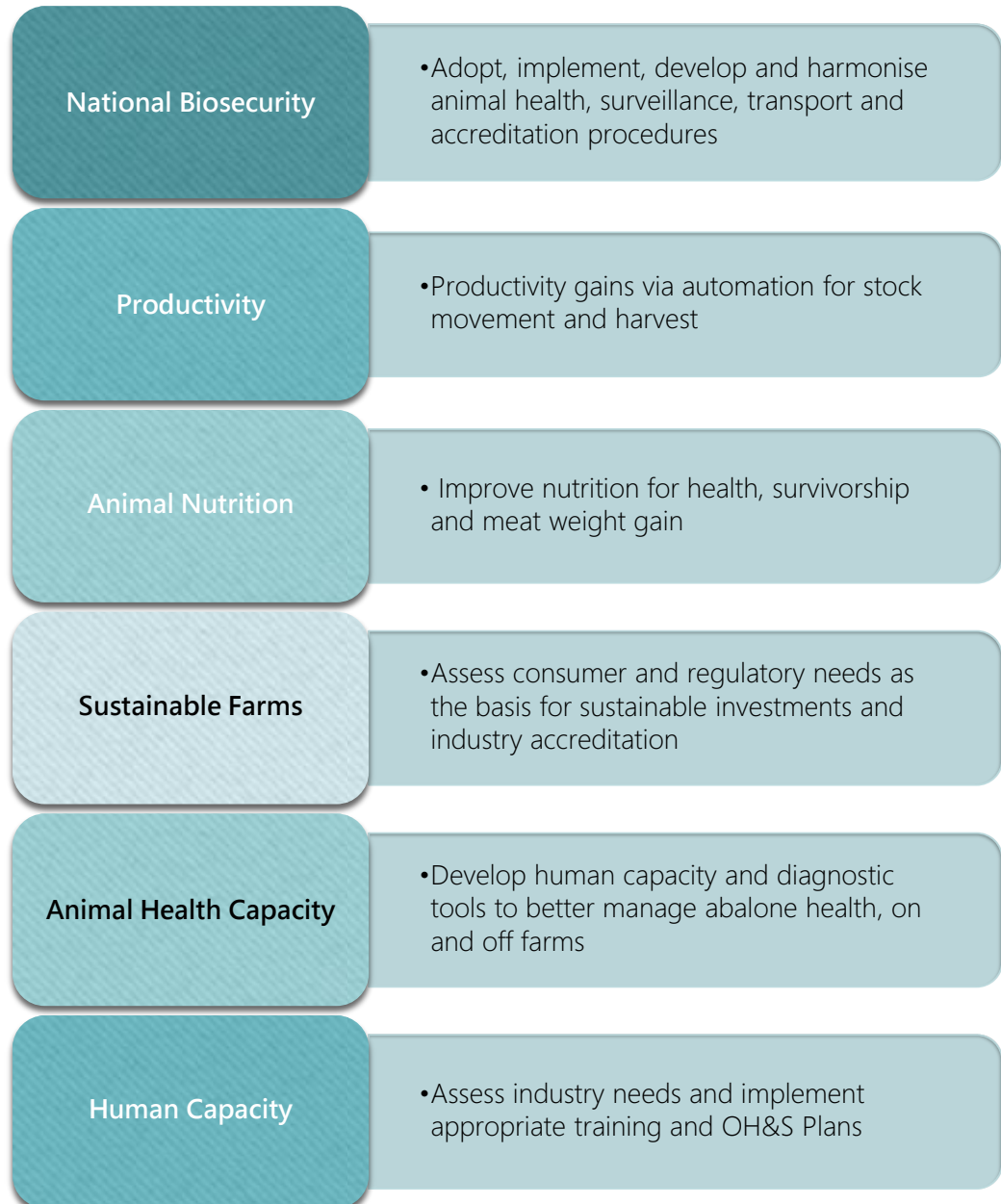
1. Implement a National Biosecurity Program for the industry,
2. Achieve Productivity Gains via automation for Stock Movement and Harvest,
3. Implement a Nutrition Program for Health, Survivorship and Meat Weight Gain,
4. Deliver Sustainable Abalone Farming Systems,
5. Build Industry Capacity to Resolve Animal Health Issues,
6. Ensure Human Capacity to meet Industry Needs,
7. An AAGA that effectively delivers defined outcomes for members,
8. Effective Marketing of safe Australian Abalone Products.

All eight goals are important to delivery of AAGA's planned outcomes by 2020. But as the sector matures over the next 10 years, AAGA Members intend that their investment will also underpin three growth platforms:

- ▶ A fundamental ability to compete in all chosen markets at all times,
- ▶ Creation of new knowledge that will leverage industry performance over time, and
- ▶ Focus on a limited number of enabling strategies that will build much needed industry capacity.

RD&E INVESTMENT PRIORITIES

AAGA's strategic intent regarding Research Development and Extension (RD&E) is to focus discretionary research funding onto six critical investment areas



2. INDUSTRY CONTEXT

BACKGROUND

Global population and middle class income growth drives resource demand. By 2030 an extra billion consumers (to 8.3 Bn) will add 25 MMT to global seafood demand. Already today, fishery products are the most globally traded human food commodity, and seafood is the most consumed by volume. While the birth rate ultimately drives food demand, in the next 5 years it is the evolution of lifestyle, product credence and health choices for established and aspiring consumers that are central to AAGA's strategy.

And nowhere is this change more evident than in Asia and especially greater China, the dominant global market for abalone products, be they wild or farmed.

The World Bank (Fish to 2030, 2013) notes a number of major uncontrollable global trends will impact seafood industry supply growth and sales over the next 15 years to 2030.

- ▶ Growing GDP per capita (17% increase) will drive increased demand for human food. Per capita consumption is expected to grow fastest in regions with highest projected income growth – China (177%), India (93%) and South East Asia (88%). These include AAGA's main-stream markets.
- ▶ Rising farmed fish supply (23% increase) will deliver ~90 MMT in 2030, equalling wild capture supply, but comprising >64% of fish for human food. This growth brings new farm technologies, production efficiency, genetic improvement, and lower unit costs for AAGA's competitors.
- ▶ Rising seafood consumption (36% increase or 40 MMT) will be met solely from new farmed supply. Since 2002 China has driven farmed global abalone supply from being only 20% of capture supply to now being almost ten times larger than capture supply. AAGA now faces millions of new middle class Asian consumers who will value branded seafood options.
- ▶ Fish supply is highly traded (38%) and very competitive in international seafood markets. Low cost developing countries currently export most (67%) of their supply to developed countries. Access to competitive trade (via FTAs) is critical for abalone farmers who export >75% of their harvest.
- ▶ Climate change impacts over the long term are uncertain but wild capture open waters events (e.g. red tides, AVG, and reduced growth) in Australia, China, Korea, and Taiwan are impacting abalone supply now.
- ▶ Seafood is very nutritious – evidence is strong that modern consumers want fish as food as it is low in saturated fats, carbohydrates, and cholesterol and provides high-value protein, and essential micronutrients (vitamins, minerals, and polyunsaturated omega-3 fatty acids).
- ▶ China will increasingly influence global seafood markets, including abalone. China will account for 37% of total fish supply and 38% of food fish. Since 1990 China's per capita fish consumption grew at 6% p.a. to 33.1 kg in 2010.

Expected high growth in farmed supply means China will likely remain a net exporter of seafood including processed re-exports. Abalone is a high value food identified by the Chinese authorities as one of their domestic supply champions, along with mitten crabs, crawfish, sea cucumber, urchins and turtle.

- ▶ Rising affluence and awareness is driving Asian consumers to travel, and to seek branded, safe, accredited, convenient products from sustainable production systems. The recent experience of the infant formula dairy crises in China (and the subsequent boom in dairy farm land values in Australia) demonstrates how swiftly mass market food choices switch and investment in sustainable production is targeted.
- ▶ Channel sophistication – consumer with increasing disposable income and greater market awareness have more power in supply channels. While top level political decrees drive austerity and put pressure on the grey channel, the legal accredited import channels become more attractive to branded products, especially where they are supported under an FTA.
- ▶ Resilience and adaptability – abalone has traditionally been merchandised and presented to urban consumers via the Food Service Sector. As urban centres and consumer markets mature in Asia, retail/cool chain/processed lines will present new and compelling sales opportunities. Consumers are increasingly turning to processed products coupled with a rise in refrigeration, although demand for live seafood is still dominant.
- ▶ Currency – the long term value of the Australian dollar value relative to the Yuan and other trade currencies can have a large and direct impact. While the A\$ has been very strong over the last five years, its recent decline to around US75 cents makes AAGA Members' products more competitive in overseas markets, on price at least.

ABALONE CONSUMPTION AND MARKETS

Abalone is a traditional seafood in Chinese and Japanese food. Australian produced abalone (both wild catch and farmed) is primarily targeted to export markets.

Approximately 25% (235t. of 890t. production in 2014/15) of farmed abalone produced in Australia is consumed domestically. The majority is delivered live to markets in state capital cities, especially Sydney and Melbourne, predominately to the local Chinese community but also to other high end restaurants.

A significant and growing proportion of domestic sales (around 70t. or 30%) is frozen, canned or vacuum packed and more readily accessible to the broader Australian community through specialist seafood suppliers and supermarkets.

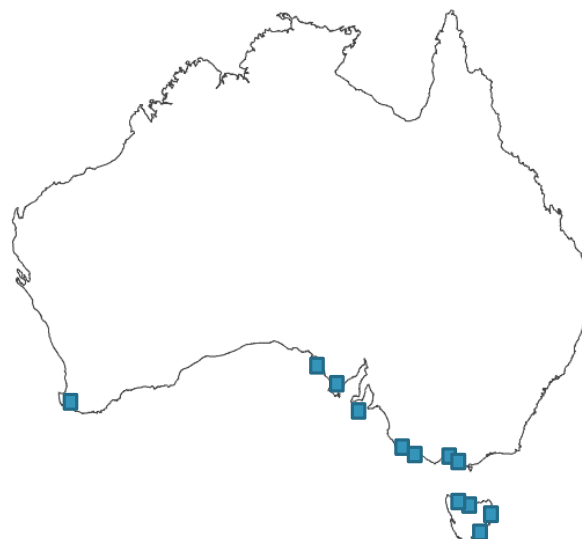
The abalone market can be summarised in three segments:



HARVEST & SUPPLY

The Australian farmed Abalone sector operates from sites across four states in southern Australia. Australian Abalone (wild catch + farmed) comprise ~4.7% of global supply.

Estimating global Abalone supply (wild and farmed) is difficult, due primarily to



uncertainty regarding China's aquaculture volume, and IUU (Illegal, Unreported, Unregulated) supply from other producers.

However a best estimate for 2013 suggests that total farmed volume was approximately 100,000 tonnes, with global supply in the order of 111,700 tonnes. Around 81% of total supply comes from abalone farms in China.

The following table presents the global abalone supply trends.

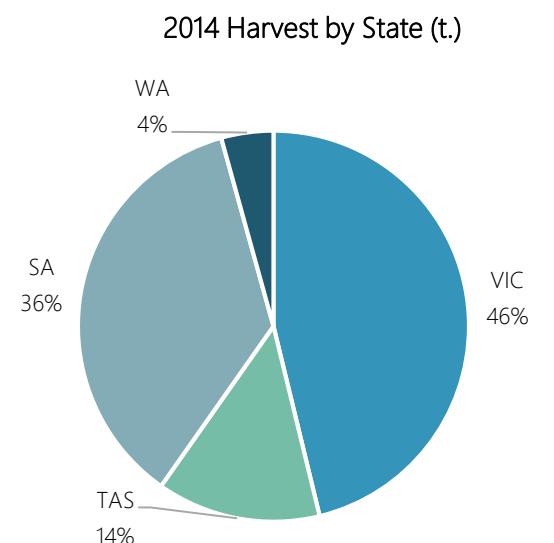
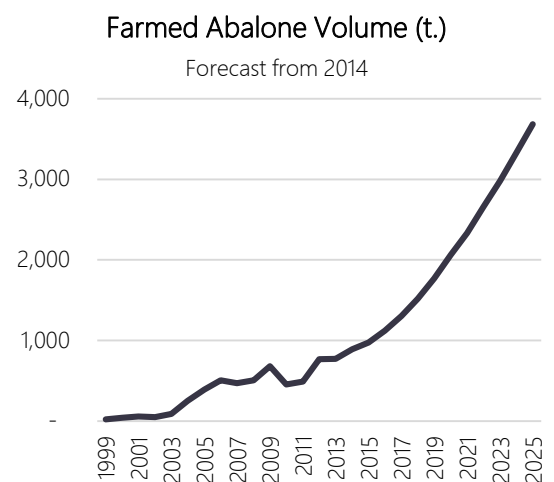
Abalone Supply '000t.	2006	2007	2008	2009	2010	2011	2012	2013
<u>Capture Fisheries</u>								
Australia	5.0	5.0	4.8	5.0	4.5	4.7	4.4	4.5
Overseas (incl. IUU)	10.5	10.0	9.8	8.0	8.9	6.6	7.6	7.6
Total Capture	15.5	15.0	14.6	12.9	13.5	11.4	12.0	12.1
<u>Aquaculture</u>								
Australia	0.5	0.5	0.5	0.7	0.5	0.5	0.8	0.8
Other excl. China	4.4	5.3	6.1	7.8	9.1	8.0	8.6	8.8
China	18.9	25.3	33.0	42.4	56.5	76.8	88.0	90.0
Total Farmed	23.8	31.0	39.6	50.8	66.0	85.3	97.4	99.6
<u>Global Supply</u>								
Total Australia	5.5	5.5	5.3	5.6	5.0	5.2	5.2	5.3
% farmed in China	48%	55%	61%	66%	71%	79%	80%	81%
% China farm growth		34%	30%	28%	33%	36%	15%	2%

Commercially farmed Abalone have been harvested in Australia since 1999, as per ABARES data. The sectors' emergence was partially stalled in 2005-06 when a disease outbreak (AVG, Abalone Viral Ganglioneuritis) caused high mortality rates in Victoria at two land-based farms, and partial losses in two other marine-based farms.

In 2014, 16 farm sites across four southern states harvested a total of 892 tonnes of Greenlip and Hybrid Abalone. Blacklip are also farmed in Australia, but the proportion is small.

As new farm investment has come on stream over the last 8 years, the farm sector has restructured – the two largest operators (comprising 6 farms) now contribute ~74% of total sector volume, and the three largest operators (comprising 7 farms) contributed 83% of total sector volume.

In 2015 the industry forecasts a harvest of ~974 tonnes (farmgate GPV \$32



million) and strong growth (mostly from existing sites) to ~3,700 tonnes (farmgate GVP ~\$122 million) in 2025.

The production systems used by the sector include co-located hatchery and growout facilities, employing land-based tanks, sea cages, and near-shore ranching on artificial reefs.

Harvested abalone are packed live for distribution either direct to live markets or for processing, usually canning or freezing. Some of the larger farms operate their own freezing and packing facilities at the farm sites. Canning is usually performed by specialist processors for subsequent distribution and export.

In 2015 the industry expects to market around 51% of its volume as frozen abalone-in-shell, with the remainder evenly split between live and canned product.

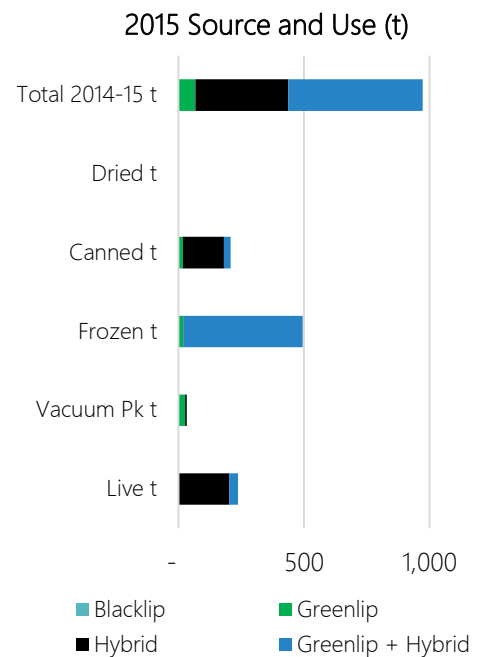
Regulatory Framework

The Australian farmed Abalone Sector operates in a complex multi-jurisdictional regulatory environment. Each operation is subject to varying levels of regulation from each jurisdiction that they operate in which focus on; aquaculture licensing requirements to allow fish farming operations to take place, along with regulation relating to waste water, food safety, food labelling, work health and safety.

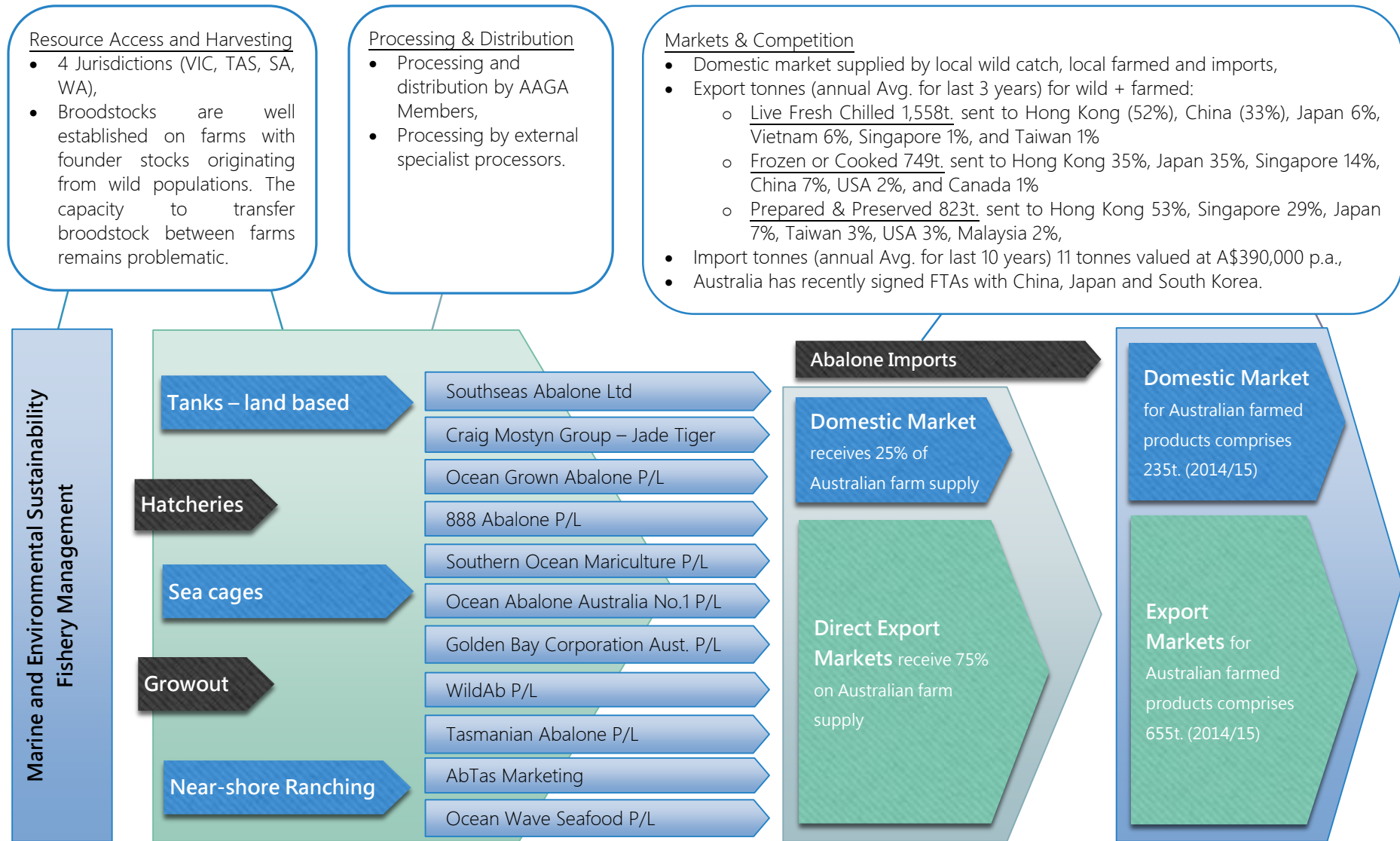
This complex and at times burdensome regulatory framework is a major challenge and disincentive to industry growth.

To mitigate the risks and costs of regulation on the sector, AAGA is working with Members and regulators to establish sustainability and biosecurity protocols and standards that address the key environmental, biosecurity, animal health and human health risks, and to enable appropriate 3rd party accreditation and verification. Specifically this Plan may include:

- ▶ Adoption of SCAAH developed Abalone Health Accreditation Program,
- ▶ Development and adoption of the Victorian Health Surveillance Program,
- ▶ Disease free accreditation to AHAB AquaPlan and FRDC standard,
- ▶ Harmonised jurisdictional legislation,
- ▶ Recognition of Victorian Health Surveillance Program – to OIE standard,
- ▶ Introduction of approvals process to freely move stock, especially for Breeding Program (s), and
- ▶ Assessment of the feasibility of a National Stock Loss self-insurance / insurance.



FARMED ABALONE SUPPLY CHAIN



INDUSTRY LEADERSHIP

Industry leadership will play an increasingly important role in the maturing farmed abalone sector. Importantly the collective choices made by AAGA leaders will have a significant and direct bearing upon the ability of member enterprises to capture all the benefits from the growth that is forecast for the sector over the next decade.

Relative to other aquaculture sectors in GVP scale in 2013 (e.g. edible oysters \$95m, pearl oysters \$79m, prawns \$60m, barramundi \$33m, mussels \$10m) farmed abalone sector operators (\$24m) are relatively close-knit. But with 12 entities controlling 16 farms across the sector, a few large farms dominating both investment and supply, and AAGA Members controlling >90% of supply, a core role of the industry body is to integrate and balance these interests.

AAGA is the representative body founded by Members for the farmed abalone sector. An incorporated Association, AAGA's role is to represent Members and prosecute their interests internally to Members, and externally to government agencies, regulators, external third parties, NGOs and the general public.

At this adolescent stage in its evolution, AAGA provides a governance framework and discussion forum to lead and manage Members' affairs in a precompetitive context. To date AAGA has retained, on commercial terms, a part time executive tasked with managing and administering issues related to the core sectoral functions of aquatic resource access, nursery and growout, disease and nutrition, and harvest activities.

In this plan Members have resolved to consolidate and expand the role and governance framework of their sectoral organisation. Their decision recognises the fundamental strategic risks they face in the coming decade and the critical role a well-resourced and well-run sectoral body will be in mitigating these problems. The fact that the sector operates in 4 separate and independent jurisdictions is a case in point. While the sector's leading enterprises bring substantial corporate resources, human skills and capacity for innovation to drive farm productivity and performance, AAGA alone can offer a range of additional benefits that address emerging concerns shared by all farms. Members have therefore identified a number of additional roles that AAGA should undertake and will address under this plan, including:

- ▶ Collation of relevant data and promotion of the sector's image to Members, potential new investors, regulators and the public, regarding its status as a sustainable and viable supplier of seafood, and its Social License to Operate,
- ▶ Benchmarking of sectoral performance and progress compared to regulatory and public expectations, and Members' strategic objectives,
- ▶ Representing and advocating Members' interests more directly and forthrightly, especially where they concern precompetitive and cross jurisdictional matters,
- ▶ Formal and informal reporting to and communicating with external stakeholders, collaborators, co-investors, regulators and the general public,

- ▶ Negotiating a more custom built framework to deliver efficient financial and investment leverage of precompetitive RD&E investment across the sector, including development of an Industry Partnership Agreement with FRDC,
- ▶ Monitoring and reporting to Members regarding emerging seafood industry and sectoral issues (e.g. Occupational Health and Safety on farms, use of Food Grade anaesthetics),
- ▶ Collate Members' views and represent their collective interests in potential collaboration with the wild catch Abalone sector (2013 GVP \$166m) regarding Australian Abalone export market development in China, Japan and elsewhere,
- ▶ An Executive Officer position with resources to manage AAGA/Industry on behalf of the AAGA Members, and undertake specific support tasks (e.g. Review of the AAGA Constitution).

INDUSTRY PARTNERSHIP AGREEMENT

AAGA Members have resolved to progress to an IPA arrangement to improve the flexibility, performance and leverage achieved from their collective precompetitive RD&E investments.

An IPA is an agreement between the FRDC and a sector body (e.g. AAGA) to manage a sector RD&E program or a suite of sectoral RD&E projects over a specified time period. IPAs have a budget allocation, based on forecast contributions, and FRDC "matching" contributions, (less an 8% FRDC service fee). Under an IPA the FRDC partners with an industry sector to deliver against that sector's RD&E Plan. The obligations of the parties signing an IPA are detailed in the signed Agreement.

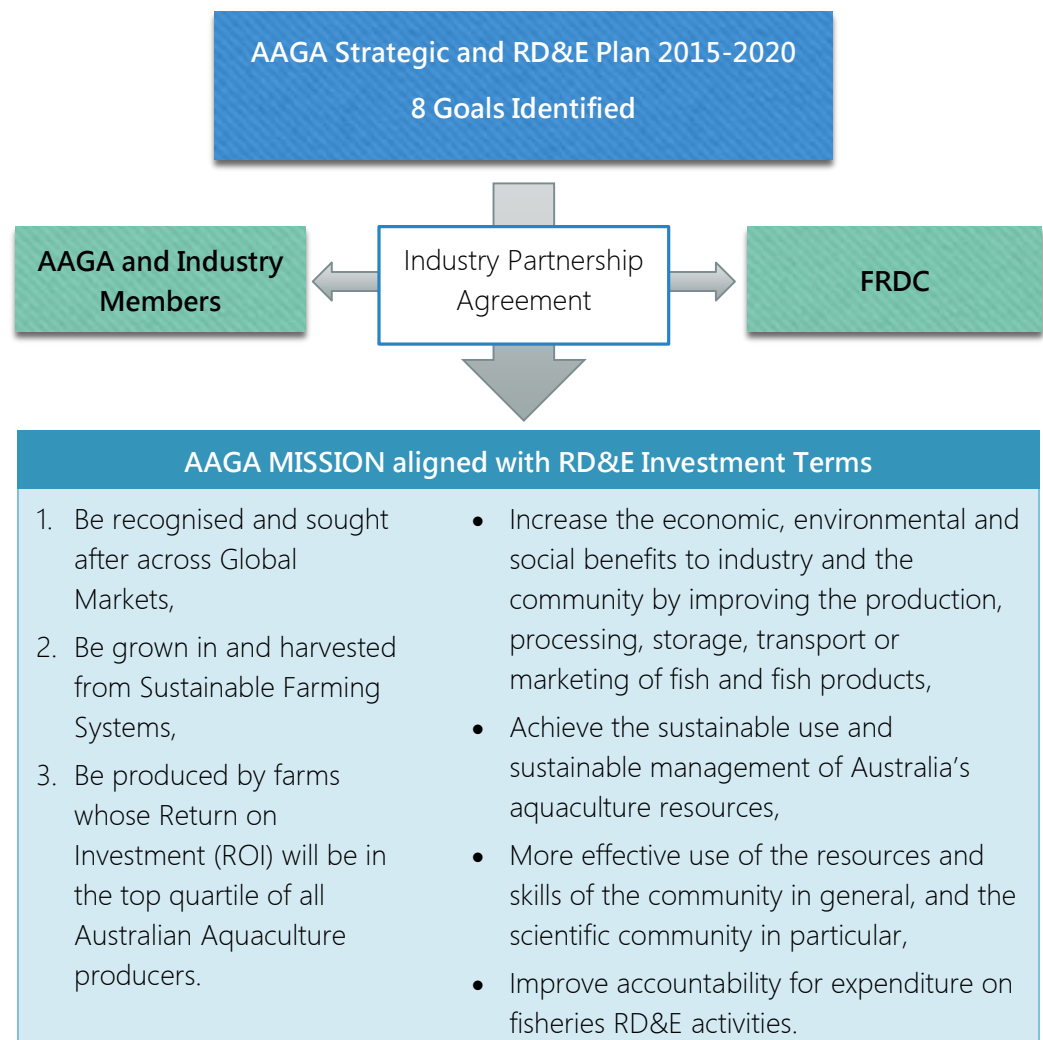
The FRDC has established an Industry Partnership Agreement model that is now formally in place with sectors including Tasmanian Salmonid Growers Assn, Oysters Australia, Australian Southern Bluefin Tuna Industry Assn, Southern Rock Lobster Limited, Western Rock Lobster Inc., and the Australian Prawn Farmers Assn.

AAGA members have identified a number of advantages to their sector from a proposed IPA model, including:

- ▶ AAGA, in consultation with the FRDC, would write a Strategic Plan (i.e. this document) outlining its short, medium and longer term RD&E priorities – hence a longer term RD&E focus (with greater long term certainty),
- ▶ Guaranteed access, at the level agreed between the AAGA and the FRDC, to both industry contributions and the Australian Government matching of contributions - the FRDC would allocate a specific budget to the AAGA from which it would invest to address its RD&E priorities,
- ▶ Investment would be focused on the AAGA Strategic Plan and outcomes, and driven by agreed indicators of success,

- ▶ Funding would be available for AAGA for R&D planning, implementation, extension and utilisation,
- ▶ A more flexible approach to the types of investment that can be made; and a quicker path from idea to contract,
- ▶ RD&E that can be linked to market outcomes (e.g. market research but not marketing itself)
- ▶ An ability to bring proposals to the FRDC five times a year (aligned with FRDC board meetings), as opposed to the current opportunity once a year (aligned with the annual competitive round)
- ▶ Final confirmation between AAGA and FRDC regarding the source and use of industry and matched funds.

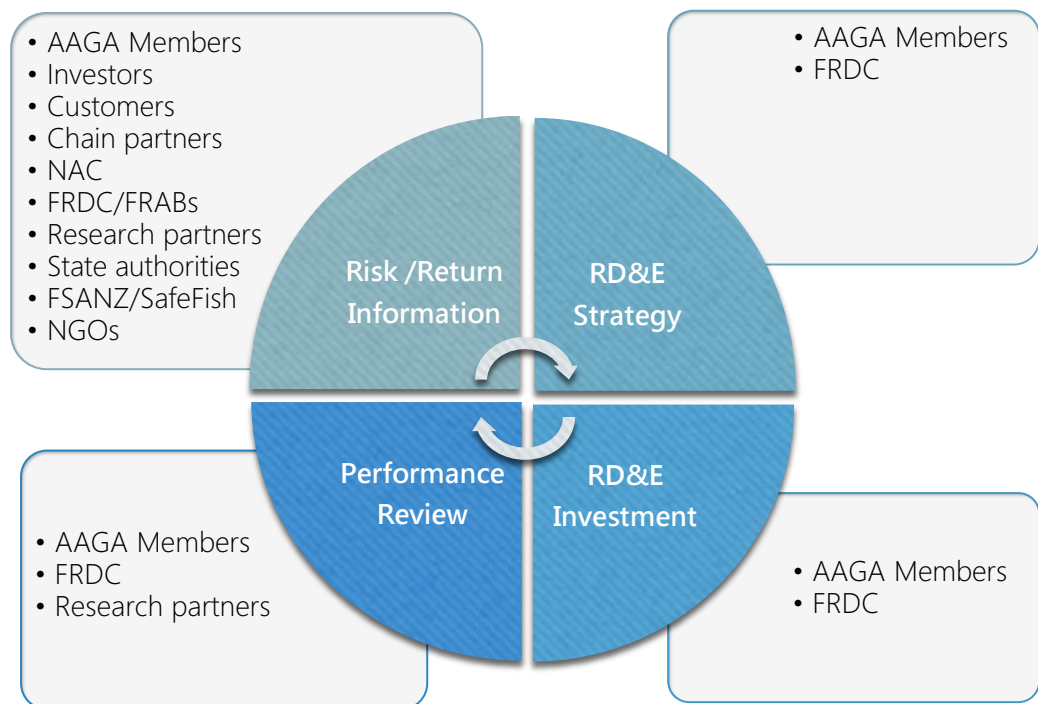
The proposed IPA will establish a customised contractual framework to better align AAGA Members' aspirations directly with FRDC's investment tools and leverage.



3. RD&E PROGRAM

INVESTMENT COLLABORATION

AAGA works with Members and many stakeholders to establish its Strategic and RD&E priorities and objectives. The following figure summarises the RD&E investment process and related sectoral collaborations for joint precompetitive investment.



RD&E investment and approval is achieved via a collaborative process between AAGA Members and research providers with priorities developed and agreed at sector meetings. This Strategic / RD&E Plan formalises this approach and embeds it into an IPA Framework as outlined above.

This Strategic and RD&E Plan provides, in the following pages, clear direction on priority areas, roles, responsibilities, timelines and expected outputs and outcomes.

The proposed model for industry investment will now see industry funding directed to RD&E investment (leveraged funds), AAGA operational costs and other agreed AAGA priorities.

AAGA and FRDC propose to establish an Industry Partnership Agreement (IPA) which allows investment in industry specific projects over a specified period against agreed industry strategic needs. The framework will continue to invite and welcome advice and information from sector collaborators.

FUNDING THE INVESTMENT

For the last few years AAGA Members have voluntarily contributed funds to joint RD&E investment projects for the sector, managed with FRDC and using the matching powers of the Commonwealth PIERD Act. The Member Tonnage Contribution formula employed is based on set contributions according to 5 Bands of self-declared harvest tonnage.

Based on this formula total industry funds contributed for 2014/15 financial year was \$128,000, which equates to 0.56% of estimated farmgate GVP (around 2.2 times the matching cap). The amount matched by FRDC in 2013-14 was \$35k, bringing the RD&E Funding pool to \$70k less service charges. FRDC leverage is based on previous av. 3 years by ABARE, therefore lag effect with growth.

Additional funds are now required by AAGA as the Members wish to increase the role and scope of AAGA as previously discussed. Members have a voluntary (i.e. not compulsory) funding model to underpin their equitable coinvestment in precompetitive RD&E projects.

For the next 5 year period Members have resolved to contribute funds according to an equitable Tonnage Contribution using a revised 5 Band formula, as follows:

1. Band 1: greater than or equal to 400t. = \$55,000 p. a.
2. Band 2: less than 400t, but greater or equal to 200t = \$40,000 p.a.
3. Band 3: less than 200t, but greater or equal to 100t = \$25,000 p.a.
4. Band 4: less than 100t, but greater or equal to 50t = \$12,000 p.a.
5. Band 5: less than 50t. = \$8,000 p.a.

Based on forecast industry growth, conservative farm gate price estimates, and the 5 Band Formula, AAGA Members will contribute voluntary levy contributions at a rate above the optimal FRDC 0.25% AGVP matching threshold. In Year 1 (2015-16) this rate will be ~0.47%, declining slowly to ~0.26% in Year 10 (2024-25). This equates to a nominal contribution rate of 16c/kg harvested in Year 1 falling to 9c/kg in Year 10.

A small component of funds invested in RD&E via the IPA will be used to support relevant project administration activities undertaken by AAGA. AAGA will also source additional funding from services provided for a fee, sponsorships, and regional industry collaboration and leverage wherever appropriate.

In summary, this Plan identifies three funding streams:

- ▶ Matched Tonnage Contributions – within the IPA terms, matched funds will be invested in AAGA/FRDC approved RD&E Projects. A small component of these matched funds may support AAGA project administration activity.
- ▶ Unmatched Tonnage Contributions - within the IPA terms, AAGA may choose to use a small portion of its unmatched funds to undertake sundry projects, such as activities outside the scope of RD&E,
- ▶ Other sources – AAGA will generate additional funds including sponsorship, returns from annual conferences, and fees for service, etc.

AAGA will determine if and how these matters will be managed within the IPA framework proposed.

INVESTMENT CAPACITY

The following table summarises the forecast Australian farmed abalone harvest and related funding that sector members will contribute under their proposed formula described above. These funds will be contributed, matched, managed and invested under an IPA with FRDC.

BASE CASE	Years ending June	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Nominal prices		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Forecast Harvest	tonnes	1,119	1,304	1,517	1,767	2,061	2,334	2,657	2,981	3,331	3,685
Forecast Beach Price	\$/kg	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00
Est. Sector GVP	\$Mill.	37	43	50	58	68	77	88	98	110	122
Est. 0.25% Avg.GVP Available for FRDC Matching	\$	82,088	93,418	108,350	126,170	146,988	169,455	193,930	219,230	246,648	274,918
FUNDS from Industry											
Est. Tonnage Contributions based on 5 Band Formula	\$	175,000	179,000	198,000	224,000	258,000	273,000	273,000	292,000	292,000	318,000
Est. Other Funds (assume nil)	\$	0	0	0	0	0	0	0	0	0	0
Total Industry Contributions	\$	175,000	179,000	198,000	224,000	258,000	273,000	273,000	292,000	292,000	318,000
FRDC Matching Funds (Net of 8% administrative costs)	\$	75,521	85,944	99,682	116,076	135,229	155,899	178,416	201,692	226,916	252,924
TOTAL IPA Funds Pool Available	\$	250,521	264,944	297,682	340,076	393,229	428,899	451,416	493,692	518,916	570,924

KEY INVESTMENT AREAS

Investment Area	Outcomes
1. National Biosecurity	<ul style="list-style-type: none"> • Adopt, develop and harmonise jurisdictional best practice health programs per AHAB AquaPlan /OIE /FRDC's Aust. Animal Health Subprogram • Gain approvals to freely move stock, especially for Breeding Program (s) • National Stock Loss self-insurance / insurance • Joint Aqua-Wild Abalone approach to Ranching/Reseeding development
2. Productivity Gain via Automation for Stock Movement and Harvest	<ul style="list-style-type: none"> • Access to approved Food Grade anaesthetics (for use at harvest without a withholding period) • Access to approved anaesthetics (for junior stock) • Design for Auto Harvester (and integrated grader) • Demonstrated productivity gains (Harvest + Stock Movement + Grading) over 5 years
3. Nutrition for Health, Survivorship and Meat Weight Gain	<ul style="list-style-type: none"> • Improve FCR by Growth, + Meat Yield + Survival over 5 years • Benchmark industry FCRs at start and progressively – Improve FCR from 1.5 to 1.0 (25% gain) • \$/kg of feed to fall by 35% over 5 years • Trials to be across Greenlip + Hybrids • Identify specific feeds for to include: Age of Fish / Temperature of Water / Greenlip and Hybrid • Dissemination of Nutrition knowledge to AAGA farms and feed millers
4. Sustainable Farming Systems	<ul style="list-style-type: none"> • Assessment of consumer and regulator needs and risks • Cost – Benefit assessment of sustainability investment for farms • Recommendation of Industry framework and accreditation regime
5. Animal Health	<ul style="list-style-type: none"> • Program to develop human capacity to manage / resolve animal health issues – both on and off farm • Tool /Diagnostic development
6. Human Capacity	<ul style="list-style-type: none"> • Identify Industry needs re Technical training and Leadership • Identify short list of Industry candidates who will be supported • Establish appropriate Industry training development packages • Establish an Industry OH&S Plan (refer to Southern Rock Lobster example)
7. AAGA effectively delivering defined outcomes for Members.	<ul style="list-style-type: none"> • An Executive Officer to manage AAGA/Industry on behalf of the AAGA Members • An Annual Industry Workshop run by AAGA Members and related Report for publication • An AAGA Communications Strategy, website and related content • An Industry Strategic Plan (based on this draft) including investment and funding strategy, and RD&E Plan • An AAGA capacity to represent Members interests and advocate on their behalf • Promote the Industry's image as a sustainable and viable supplier, and its Social License to Operate • Benchmarking of Progress across industry including an annual report card. • Establish the Industry Partnership Agreement with FRDC per agreement today • Review Constitution
8. Marketing of Safe Australian Abalone Products	<ul style="list-style-type: none"> • Export Market development program to consumers in China and other overseas Chinese markets – collaborate with Wild Abalone sector • Identify and address market access barriers • Consider and make a decision regarding introduction of a "precompetitive" market levy • Engage with SafeFish regarding management of food safety and related risks

INVESTMENT AREA 1. NATIONAL BIOSECURITY

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
1. Adopt SCAAH developed AHAP (Abalone Health Accreditation Program) as approved by AHC (Animal Health Committee)	The AHAP describes the requirements by which abalone producers may establish and maintain disease-free status of a defined abalone population. The AHAP facilitates safe translocation of abalone within or between jurisdictions. Requires cooperation of states.	AAGA, FRDC, (SCAAH/AHC)	AAGA/ AHC State	Near Term	AAGA/FRDC State DPIs
2. Develop and adopt the Victorian Health Surveillance Program over the AHAP	The Victorian model has been in place at Victorian AAGA farms 2007, however it is not recognized by PIRVIC. Many farms consider this model to be more effective for biosecurity than the AHAP model. Requires cooperation between states	AAGA, State DPIs, SCAAH/AHC FRDC	AAGA, State DPIs, SCAAH/AHC	Mid Term	AAGA/FRDC State DPIs
3. Disease free accreditation to AHAP AquaPlan standard + FRDC's Aquatic Animal Health Subprogram	Recognition of accredited farms as disease free compartments allowing freedom to move stock between like compartments or from compartments of greater to lesser standard. Requires cooperation between states	AAGA, State DPIs, SCAAH/AHC FRDC	AAGA, State DPIs, SCAAH/AHC	Mid Term	AAGA/FRDC State DPIs
4. Harmonised jurisdictional legislation	Requires willingness & cooperation between state jurisdictions to adopt and recognize common legislation.	AAGA, State DPIs, SCAAH /AHC, FRDC	AAGA, State DPIs, SCAAH /AHC	Mid Term	AAGA/FRDC State DPIs
5. Recognition of Victorian Health Surveillance Program – to OIE standard	Modification of the program may be required for OIE recognition and broader acceptance by state jurisdictions. . Requires cooperation between states	AAGA, State DPIs, SCAAH /AHC, FRDC	AAGA, State DPIs, SCAAH/AHC	Mid Term	AAGA/FRDC State DPIs
6. Gain approvals to freely move stock, especially for Breeding Program (s)	Secures greater farming efficiencies, especially in the event of a farm becoming over/under stocked - an essential requirement for any National Breeding Program. Requires Objectives 1~4 above to be in place.	AAGA, State DPIs, FRDC	AAGA, State DPIs, FRDC	Mid Term	AAGA/FRDC State DPIs
7. National Stock Loss self-insurance / insurance	AAGA members would assist another Member farm to restock following major loss of stock, thereby eliminating or reducing the need for stock insurance. Requires Objective 6 above.	AAGA	AAGA/FRDC	Mid Term	AAGA/ FRDC
8. Joint Aqua-Wild Abalone approach to Ranching/Reseeding development	Ranching and reseedling may provide an opportunity for farmers. Increasingly the wild sector recognises opportunity to reseed to assist in restoring depleted stocks. Reseeding requires championing and cooperation by wild fishers.	ACA, AAGA, Processors Chain partners	ACA, AAGA	Long Term	ACA, (AAGA) Processors FRDC

INVESTMENT AREA 2. PRODUCTIVITY GAIN

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
1. Access to approved Food Grade anaesthetics (for use at harvest without a withholding period)	Pursues recognition of Magnesium Chloride or Magnesium Sulphate by APVMA (registered or MUP) as a relaxant for handling/grading market stock without or with a very short with-holding period. Current SARDI/Flinders University Project. APVMA registration is a demanding and uncertain process even for relatively benign reagents, requiring exhaustive R&D processes.	AAGA, SARDI, Flinders Uni., FRDC	AAGA	Near Term	AAGA, SARDI, Flinders Uni., FRDC
2. Access to approved anaesthetics (for junior stock)	Pursues recognition of 2PE (2-phenoxyethanol) by APVMA (registered or MUP) as safer and better alternative to Benzocaine as a relaxant for handling/grading junior stock. Current SARDI/Flinders University Project. APVMA registration is a demanding and uncertain process even for relatively benign reagents, requiring exhaustive R&D processes.	AAGA, SARDI, Flinders Uni., FRDC	AAGA	Near Term	AAGA, SARDI, Flinders Uni., FRDC
3. Design for Auto Harvester (and integrated grader)	Mechanised/automated grading of stock by weight following use of relaxants (see 2 above). This is especially relevant to grading prior to market.	AAGA, SARDI, Flinders Uni., FRDC	AAGA, FRDC, Equipment makers/suppliers	Mid Term	AAGA, FRDC
4. Demonstrated productivity gains (Harvest + Stock Movement + Grading) over 5 years	Labour costs in Australia are higher than our competitors. Labour is the greatest single cost on AAGA Member farms. Measure productivity gains in labour saving, improved OH&S and better quality jobs in our industry as well as improved product quality, (less stress, more even grades)	AAGA, FRDC	AAGA, FRDC	Mid Term	AAGA, FRDC

INVESTMENT AREA 3. ANIMAL NUTRITION

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
1. Improve FCR by Growth, + Meat Yield + Survival over 5 years	Feed costs are the second largest cost (after labour) on Australian abalone farms. Improved FCR's, meat yield and survival will result in more efficient farms especially in terms of food consumption.	AAGA, SARDI, Flinders Uni., FRDC, Feed companies	AAGA, SARDI, Flinders Uni.,	Mid Term	AAGA, SARDI, Flinders Uni., FRDC
2. Benchmark industry FCRs at start and progressively – Improve FCR from 1.5 to 1.0 (25% gain)	Requires cooperation between AAGA members and regular benchmarking.	AAGA, FRDC	AAGA	Near Term	AAGA, FRDC
3. \$/kg of feed to fall by 35% over 5 years	Investment in R&D along with greater food requirements and accompanying economies of scale (including buying power) may lead to cheaper and better abalone feeds whilst ensuring the profitability of feed manufacturers.	AAGA, SARDI, Flinders Uni., FRDC, Feed companies	AAGA, SARDI, Flinders Uni., Feed companies	Mid Term	AAGA, SARDI, Flinders Uni., FRDC, Feed companies
4. Trials to be across Greenlip + Hybrids	Laboratory based trials based at SARDI have concentrated on greenlip due in part to limited supply of hybrids in SA and biosecurity protocols preventing import of hybrid stocks from Vic or Tas. Access to hybrids in SA remains problematic especially as SA hybrids may be dissimilar to VIC. / TAS. hybrids.	AAGA, SARDI, Flinders Uni., FRDC, Feed companies	AAGA, SARDI, Flinders Uni.,	Near Term	AAGA, SARDI, Flinders Uni., FRDC
5. Identify specific feeds for to include: Age of Fish / Temperature of Water / Greenlip and Hybrid	Blacklip are known to have a lower temperature threshold than greenlip. The difference between greenlip, blacklip and hybrids may be useful in understanding how abalone respond to higher and lower temperatures.	AAGA, SARDI, Flinders Uni., FRDC, Feed companies	AAGA, SARDI, Flinders Uni.,	Near Term	AAGA, SARDI, Flinders Uni., FRDC
6. Dissemination of Nutrition knowledge to AAGA farms and feed millers	The above are largely included in current "Thriving Abalone" R&D program coordinated by Dr. David Stone. As co-investors in the program the feed companies are able to rapidly implement findings. A risk from this approach is that non AAGA members also benefit.	AAGA, SARDI, Flinders Uni., FRDC, Feed companies	AAGA, SARDI, Flinders Uni.,	Current	AAGA, SARDI, Flinders Uni., FRDC

INVESTMENT AREA 4. SUSTAINABLE FARMING SYSTEMS

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
1. Assessment of consumer and regulator needs and risks	Identifies the requirements to be met for formal accreditation standards.	AAGA, FRDC	AAGA FRDC	Mid Term	AAGA, FRDC
2. Cost – Benefit assessment of sustainability investment for farms	Identify any management changes and cost the requirements, mechanisms to comply. Assess the worth of compliance, i.e. to customers and regulators.	AAGA, FRDC	AAGA, FRDC	Mid Term	AAGA, FRDC
3. Recommendation of Industry framework and accreditation regime	Seeks to find which accreditation framework best suits our members, customers and regulators.	AAGA, FRDC, (NAC)	AAGA, FRDC (NAC)	Mid Term	AAGA, FRDC, (NAC)

INVESTMENT AREA 5. ANIMAL HEALTH

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
1. Program to develop human capacity to manage / resolve animal health issues – both on and off farm	Maximum farm productivity can only be achieved with healthy stock. Identify skill gaps and subsequently train personnel both farm and off farm at diagnostic labs & research institutions.	AAGA, FRDC, Labs, Universities	AAGA, FRDC	Mid Term	AAGA, FRDC, other
2. Tool /Diagnostic development	Identify and apply modern, novel and evolving technology to optimise growth performance e.g. may include CSIRO "Biologgers" and other remote sensing technologies.	AAGA, FRDC, CSIRO, Universities, Labs	AAGA, FRDC, CSIRO	Mid Term	AAGA, FRDC, CSIRO, other

INVESTMENT AREA 6. HUMAN CAPACITY

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
1. Identify Industry needs re Technical training and Leadership	Effective training will not only promote good farm practices but also attract quality staff to our industry. Many of our current leaders have come to the industry from research and engineering backgrounds. Generational change is looming.	AAGA, FRDC, Training Institutions	AAGA, FRDC, Training Institutions	Mid Term	AAGA, FRDC, Training Institutions
2. Identify short list of Industry candidates who will be supported	Will include wide range of industry participants including farm staff and researchers, etc.	AAGA, FRDC	AAGA, FRDC	Mid Term	AAGA, FRDC
3. Establish appropriate Industry training development packages	Whilst work practices necessarily vary from farm to farm, there are many common underlying practices.	AAGA, FRDC, Training Institutions	AAGA, FRDC	Mid Term	AAGA, FRDC, Training Institutions
4. Establish an Industry OH&S Plan (refer to Southern Rock Lobster example)	Standard Operating Procedures related to OH&S can be time consuming to write and implement. A common template is likely to be more thorough and cost effective. Cooperation is likely to reveal best case practices that may be implemented across the industry.	AAGA, FRDC	AAGA, FRDC	Mid Term	AAGA, FRDC

INVESTMENT AREA 7. AAGA - AN EFFECTIVE NATIONAL BODY

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
1. An Executive Officer to manage AAGA/Industry on behalf of the AAGA Members	Needs to reflect the aspirations of AAGA but be cognisant of budgetary constraints. Requires leadership from the EO, but also support and direction from the Members.	AAGA, FRDC	AAGA EO, AAGA, FRDC	Current	AAGA, FRDC
2. An Industry Annual Report for publication	Need for effective (and improved) communication of AAGA activities, especially given AAGA's expanded role as identified in this document.	AAGA, FRDC	AAGA EO, AAGA, FRDC	Current	AAGA, FRDC
3. An AAGA Communications Strategy, website and related content	Provides a mechanism to update information for Members and promote the industry to consumers, investors, regulators. (Potential to be hosted by NAC).	AAGA, FRDC, (NAC)	AAGA, FRDC	Near Term	AAGA, FRDC
4. An Industry Annual Workshop run by AAGA/Members	A long standing tradition. (Next due the week commencing 10th August 2015, possibly at SARDI).	AAGA, SARDI, FRDC	AAGA, SARDI, FRDC	Current	AAGA, SARDI, FRDC
5. An Industry Strategic Plan including investment and funding strategy, and RD&E Plan	See this document.	AAGA, FRDC	AAGA, FRDC	Current	AAGA, FRDC
6. An AAGA capacity to represent Members' interests and advocate on their behalf	NAC provides representation and advocacy for AAGA at least for broader aquaculture industry issues. Currently includes chemical registration and EAADRA. AAGA will continue its role specifically on abalone issues.	AAGA, NAC, FRDC	AAGA, NAC, FRDC	Near Term	AAGA, NAC, FRDC
7. Promote the Industry's image as a sustainable and viable supplier, and its Social License to Operate	Social License to Operate is an emerging issue for all wild and aquaculture fisheries.	AAGA, NAC, FRDC	AAGA, NAC, FRDC	Mid Term	AAGA, NAC, FRDC
8. Benchmarking of Progress across industry	Very useful for farms to gauge productivity against their peers, and for overall industry compliance and improvement.	AAGA, FRDC	AAGA, FRDC	Near Term	AAGA, FRDC
9. Establish the Industry Partnership Agreement with FRDC per agreement today	This document is a requirement for an IPA with FRDC.	AAGA, FRDC	AAGA, FRDC	Current	AAGA, FRDC
10. Review Constitution	The existing constitution is overly complex. NAC is currently reviewing its constitution, whilst TSGA has recently reviewed theirs.	AAGA, FRDC	AAGA, FRDC	Short Term	AAGA, FRDC

INVESTMENT AREA 8. MARKETING FARMED ABALONE

RD&E Investment Objective	Risks and Rationale	Co-Investment	Responsibility	Horizon	Resource
1. Export Market development program to consumers in China and other overseas Chinese markets – collaborate with Wild Abalone sector	ACA and SCRC have a recent ongoing project on marketing wild abalone to China and Japan. Collaboration on this work would be useful for AAGA, but would require cooperation from ACA. Some processors of farmed abalone are AAAI members.	AAGA, FRDC, (ACA, AAAI)	AAGA, FRDC	Near Term	AAGA, FRDC, (ACA, AAAI)
2. Identify and address market access barriers	Regulations surrounding direct sales to China of both live and processed farmed abalone appear to be in a state of flux, relating to infrastructure through to tariff regulations.	AAGA, FRDC, (ACA, AAAI, DFAT)	AAGA, FRDC, (DFAT)	Near Term	AAGA, FRDC, (ACA, AAAI)
3. Consider and make a decision regarding introduction of a “precompetitive” market levy	Such a levy may cover domestic and international market research.	AAGA, FRDC	AAGA	Near Term	AAGA, FRDC
4. Engage with SafeFish regarding management of food safety and related risks	SafeFish may be the best body to coordinate the safety of farmed abalone. SafeFish has recently been restructured and its Strategic Plan will be released soon.	AAGA, FRDC, (NAC)	AAGA	Near Term	AAGA, FRDC (NAC)

FORECAST INVESTMENT PLAN

The following is NOT intended as a hard and fast budget, but as a forecast tool reflecting the aspirations and priorities identified in the recent December 2014 AAGA Strategic Planning workshop. AAGA's investment plan needs flexibility to be adjusted liberally to reflect changing priorities and opportunities.

FORECAST GROWTH Nominal Values	Years ending June	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total for 10 Year Period 2016-25
		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
<i>Investment Term</i>		<i>Near Term Horizon</i>			<i>Mid Term Horizon</i>			<i>Long Term Horizon</i>				
Forecast Harvest	tonnes	1,119	1,304	1,517	1,767	2,061	2,334	2,657	2,981	3,331	3,685	22,756
Forecast Farmgate Price	\$/kg	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00	
Est. Sector GVP	\$Mill.	37	43	50	58	68	77	88	98	110	122	751
Est. IPA RD&E Funds Pool	\$	250,521	264,944	297,682	340,076	393,229	428,899	451,416	493,692	518,916	570,924	4,010,297
Share of Funds Pool available as Matched RD&E Investment		157,608	179,362	208,032	242,246	282,216	325,354	372,346	420,922	473,563	527,842	
% Share of Funds		63%	68%	70%	71%	72%	76%	82%	85%	91%	92%	
Investment Area		<i>Forecast RD&E Investments</i>					<i>Indicative RD&E Estimates Only</i>					
1. National Biosecurity	30%	75,156	79,483	89,305	102,023	117,969	128,670	135,425	148,107	155,675	171,277	1,203,089
2. Productivity Enhancements	15%	37,578	39,742	44,652	51,011	58,984	64,335	67,712	74,054	77,837	85,639	601,545
3. Animal Nutrition	8%	20,042	21,196	23,815	27,206	31,458	34,312	36,113	39,495	41,513	45,674	320,824
4. Sustainable Farming	5%	12,526	13,247	14,884	17,004	19,661	21,445	22,571	24,685	25,946	28,546	200,515
5. Animal Health	4%	10,021	10,598	11,907	13,603	15,729	17,156	18,057	19,748	20,757	22,837	160,412
6. Human Capacity	4%	10,021	10,598	11,907	13,603	15,729	17,156	18,057	19,748	20,757	22,837	160,412
7. AAGA Leadership	30%	75,156	79,483	89,305	102,023	117,969	128,670	135,425	148,107	155,675	171,277	1,203,089
8. Abalone Marketing	4%	10,021	10,598	11,907	13,603	15,729	17,156	18,057	19,748	20,757	22,837	160,412
TOTAL INVESTMENT \$	100%	250,521	264,944	297,682	340,076	393,229	428,899	451,416	493,692	518,916	570,924	4,010,297

Glossary

AAAI	Abalone Association of Australasia Inc. (Processors Association)
AAGA	Australian Abalone Growers Association
ACA	Abalone Council of Australia
AHC	Animal Health Committee (Includes state CVO's)
APVMA	Australian Pesticides and Veterinary Medicines Authority
ASQAAC	Australian Shellfish Quality Assurance Advisory Committee
CVO	Commonwealth Chief Veterinary Officer
DFAT	Commonwealth Department of Foreign Affairs and Trade
DoA	Commonwealth Department of Agriculture
EAADRA	Emergency Aquatic Animal Disease Response Arrangements
FCR	Feed Conversion Ratio
FRDC	Fisheries Research and Development Corporation
FSANZ	Food Standards Australia New Zealand
IPA	Industry Partnership Agreement
MUP	Minor Use Permit
NAC	National Aquaculture Council
NGOs	Non-Government Organisations
OA	Oysters Australia
OIE	World Organisation for Animal Health
PIRVIC	Primary Industries Research Victoria
SARDI	South Australian Research and Development Institute
SCAAH	Sub-Committee Aquatic Animal Health
SCRC	Seafood Cooperative Research Centre
STAG	Seafood Trade Advisory Group
State DPIs	Convenient collective term for the variously named state departments administering aquaculture and fisheries.
TSGA	Tasmanian Salmonid Growers Association