Western Australia Aquaculture: State Forum
Proceedings and Outcomes Report
26 May 2016
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Executive Summary

The inaugural Aquaculture Western Australia: State Forum was organised and resourced by the Kimberley, Pilbara, Gascoyne, Mid West, Wheatbelt, South West, Great Southern and Goldfields-Esperance Development Commissions; the Western Australian Department of Fisheries; and Aquaculture Council of Western Australia.

Approximately 150 people participated in the Forum, representing key agencies of the Western Australian government, leadership of Western Australian aquaculture industry and proponents of Western Australian aquaculture projects, national aquaculture industry leaders, Aboriginal corporations and Prescribed Body Corporates, the investment sector, services sector and the research and training sectors.

The Forum, comes at an important cross-roads for the nascent Western Australian aquaculture industry. The purpose of the forum was to undertake a stocktake of the history, current status and prospects for the Western Australian aquaculture industry, develop a common understanding among key stakeholders of the risks and opportunities, acquire learnings in aquaculture industry development from more developed industries and determine the key elements of a pathway forward.

To this end the Forum was conducted according to three presentation sessions and a final panel and participant discussion. The key observations from the three presentation sessions are summarised in the following table.
The panel and forum discussion that followed in Session 4 identified the following themes as the key elements of a plan for developing the Western Australian aquaculture industry:

- The strategy must be a clear, simply pathway the necessity of the components of which are obvious and that is determined and led by industry.
- There must be a sustained (approximately 10 year) multi-stakeholder (industry, government and training and research sector) commitment to that strategy.
- There must be a transition to transparency and certainty in departmental and inter-departmental decision making in all aspects of approvals and regulatory decision-making that pertain to aquaculture projects.
- Tenure security is paramount and the identification of new zones must be led by industry.
- Project approvals processes must be as simple and predictable as possible.
- Industry should be supported by ‘centres-of-excellence’ in key areas such as juvenile supply and fish health.
- From a regulatory and policy perspective, ensure that the foci or organisation of regulatory activity is optimal. For example, it may be more effective to manage according to species rather than regions.
Industry and government need to send a clear message to communities, capital markets and the wider seafood industry that aquaculture is a good industry for the State to have and that the State wants the industry.

Training resources currently targeted at the industry, need to be redirected to specific training that the industry needs

Direct subsidisation of projects and infrastructure should be limited to areas of market failure with a clear exit strategy for government. Investment stimulation mechanisms other than direct subsidisation such as concessional loans could also be examined.

Government and industry must make a greater effort to achieve meaningful Aboriginal participation in the industry workforce and in enterprise ownership.

The level of financial commitment from the State that is required to give effect to an economically sustainable Western Australian aquaculture culture industry is in the order of A$20 to A$50 million over 10 years, with a significant portion of this investment likely to be required to be ‘front-loaded’.

Based on the observations from the Forum, the following figure sets out the key elements of a plan for developing a Western Australian aquaculture industry, key responsibility for each element and a suggested timeline.

---

10 Year Plan for the Development of a Western Australian Aquaculture Industry of Scale

<table>
<thead>
<tr>
<th>Sector Prioritisation</th>
<th>Regulation &amp; Approvals Reform</th>
<th>Hatchery, Fish Health, and R&amp;D</th>
<th>Regional Development Coordination</th>
<th>Training and Workforce Development</th>
<th>Communications Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry agreed prioritisation of key species focus on comparative advantage in key domestic and regional seafood markets.</td>
<td>Transition to a contemporary approvals and regulatory framework.</td>
<td>Give effect to rationalisation and revitalisation of core State finfish hatchery and applied research infrastructure.</td>
<td>Based on the sector prioritisation, coordination and marshaling of regional development resources to support the key sectors, address market failure (help de-risk) and optimise regional development benefits.</td>
<td>Focus State training and education investment on skill requirements specified by industry.</td>
<td>Develop and implement a community targeted communications strategy that promotes opportunities in the Western Australian aquaculture through “WA Open for Business” and other channels, and clearly demonstrates Western Australian Government support for the industry.</td>
</tr>
<tr>
<td>Industry identification of optimal location for species production clusters.</td>
<td>Rapidly progress the current red-tape reduction initiative.</td>
<td>Establishment of multi-species mollusc hatchery.</td>
<td>Clearly articulate and differentiate the role of small-scale aquaculture in regional communities.</td>
<td>Work with Aboriginal leadership (particularly in regional Western Australia) to grow Aboriginal participation in the aquaculture workforce and enterprise ownership, as well as in industry leadership.</td>
<td></td>
</tr>
<tr>
<td>Ensure that ACWA members are aligned on the focus and that ACWA maintains a strong leadership voice in promoting the focus.</td>
<td>Implement transparency in intra and inter departmental processes and decision-making.</td>
<td>Enhanced resourcing of Department of Fisheries Fish Health Unit to continue to support the aquaculture industry.</td>
<td>Engage the R&amp;D services of the national and international aquaculture innovation ecosystem.</td>
<td>Develop a strategy for greater Aboriginal participation in the aquaculture industry.</td>
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<td></td>
<td>Progress lead agency cultural change program.</td>
<td>Work with industry to determine new aquaculture zones.</td>
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</table>

Immediate Term | Continuous Improvement | Short Term | Immediate Term | Short Term | Short Term |
1. **Background**

1.1. **Aquaculture in Western Australia**

A seafood aquaculture industry has operated in Western Australia for at least the past three decades, but has struggled to achieve scale that is adequate to make a meaningful contribution to Gross State Product, employment, local seafood supply or exports. This is an economic development dilemma which has been attributed to a number of factors.

However, over the past several years there has emerged a small number of professionally managed aquaculture projects focusing on developing large scale production of species of marine finfish and molluscs at climatically diverse locations along the Western Australian coastline, as well proponents endeavouring to reinvigorate existing small sectors of the industry. Concomitantly, over the past few years the Western Australian Government has made a policy commitment to aquaculture as a strategic industry for Western Australia and has invested in a number of initiatives to de-risk investment in aquaculture in Western Australia. Additionally, eight out of the nine regions in Western Australia identified aquaculture as a major pillar of development in their region.

In the context of the industry’s challenged history and this new hope for development, the inaugural Aquaculture Western Australia: State Forum (the ‘Forum’), comes at an important cross-roads for the nascent Western Australian aquaculture industry.

1.2. **The Forum Partners**

The Forum, was funded and organised as a collaborative project between the Kimberley, Pilbara, Gascoyne, Mid West, Wheatbelt, South West, Great Southern and Goldfields-Esperance Development Commissions; the Western Australian Department of Fisheries; and Aquaculture Council of Western Australia. These organisations are summarised in the following subsections.

1.2.1. **Regional Development Commissions**

For the purposes of economic development planning and analysis, Western Australia can be discussed according to nine regions. The boundaries of these regions are illustrated in Figure 1 below.

---

1 Government of Western Australia, Department of Lands
The economic development of each of these regions is promoted, and to some extent coordinated, by a Regional Development Commission. Regional Development Commissions are Western Australian Government statutory authorities established and empowered pursuant to the provisions of the *Regional Development Commission (WA) Act 1993*. The functions and roles of regional development commissions are summarised in Table 1 below.
Functions

- Maximise job creation and improve career opportunities in the region;
- Develop and broaden the regional economy;
- Identify infrastructure services to promote economic and social development of the region;
- Provide information and advice to promote business development within the region; and
- Seek to ensure that the standard of and access to government services in the regions is comparable to the Perth metropolitan area.

Role

- Promote the region
- Facilitate coordination between relevant statutory bodies and State Government agencies
- Cooperate with representatives of industry and commerce, employer and employee organisations, education and training institutions and other sections of the community within the region
- Identify the opportunities for investment in the region and encourage that investment
- Identify the infrastructure needs of the region and encourage the provision of that infrastructure in the region
- Cooperate with departments of the public service of the State and Commonwealth and other agencies, instrumentalities and statutory bodies of the State and the Commonwealth in order to promote equitable delivery of services within the region; and
- Cooperate with local governments in order to promote equitable delivery of services

Table 1 – Function and Role of Regional Development Commissions

Largely as the result of a review of the functions and roles of Regional Development Commissions, the Regional Development Commissions have in recent years been specifically charged with the development and custodianship of the Regional Investment Blueprints. The Regional Investment Blueprints are plans for investment in transformative strategies, priority actions and opportunities for driving growth in each of the regions. As summarised in Table 2 below, eight of the nine Regional Investment Blueprints reference the development of a local aquaculture industry as a major driver of future growth in the specific region.

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2 Government of Western Australia (2010), Structuring Regional Development for the Future: A Review of the Functions and Responsibilities of Regional Development Commissions
<table>
<thead>
<tr>
<th>Regional Investment Blueprint</th>
<th>Example Reference to Aquaculture Development Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kimberley</td>
<td>Accelerate expansion of regional aquaculture</td>
</tr>
<tr>
<td></td>
<td>Facilitate the development aquaculture precincts where land and water are available in commercial quantities</td>
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<tr>
<td></td>
<td>Develop regional core aquaculture skills base to supply labour</td>
</tr>
<tr>
<td></td>
<td>Development methodology and practical models for the engagement of Aboriginal people in the aquaculture labour markets</td>
</tr>
<tr>
<td>Pilbara</td>
<td>A suite of Common Use Facilities, hubs or centres of excellence across the region supporting manufacture, the mineral and energy industries, agriculture and aquaculture and infrastructure projects</td>
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<tr>
<td></td>
<td>Land tenure frameworks supporting agriculture and aquaculture (onshore and offshore) development</td>
</tr>
<tr>
<td></td>
<td>Identification of agriculture and aquaculture species suited to the Pilbara</td>
</tr>
<tr>
<td></td>
<td>Algae based aquaculture producers exporting nutraceuticals and pharmaceuticals to local, national and international markets</td>
</tr>
<tr>
<td>Gascoyne</td>
<td>Aquaculture represents a significant opportunity for the Region</td>
</tr>
<tr>
<td></td>
<td>Coastal orientation of the Region supports emerging aquaculture-based seafood production</td>
</tr>
<tr>
<td></td>
<td>Actioning of the comparative advantage of the Gascoyne Region in food production via the attraction of domestic and international investment in aquaculture production</td>
</tr>
<tr>
<td>Mid West</td>
<td>The Region is globally renowned for its large scale production of high quality food through innovative and sustainable fishing and aquaculture practices, with commercial sale aquaculture established and developing</td>
</tr>
<tr>
<td></td>
<td>Opportunity to develop into a major finfish aquaculture development region based on the region’s warm and clean waters and established industry base</td>
</tr>
<tr>
<td>Wheatbelt</td>
<td>Unique landscapes offer opportunities for aquaculture, particularly in the central coastal and central midlands sub-regions of the Wheatbelt, including inland aquaculture and mariculture.</td>
</tr>
<tr>
<td>South West</td>
<td>Promote the development of Aboriginal community resources and enterprises in the South West through expanding the Ngalang Boodja integrated aquaculture enterprise to a sustainable scale of operation in marron and freshwater fish species farming.</td>
</tr>
<tr>
<td>Great Southern</td>
<td>Major investments in aquaculture and the integration of the food producing sector with tourism represent major opportunities, including the establishment of an aquaculture zone off the south coast.</td>
</tr>
<tr>
<td></td>
<td>By 2040 aquaculture will have established a strong presence in the regional economy and produce significant volumes of quality seafood for domestic and export markets</td>
</tr>
<tr>
<td>Goldfields-Esperance</td>
<td>Further development of the aquaculture industry is planned by creating investor-ready aquaculture zones across the south coast.</td>
</tr>
<tr>
<td></td>
<td>Capturing investment in aquaculture is therefore critical to leverage the Region’s natural competitive advantage in seafood production</td>
</tr>
</tbody>
</table>

**Table 2 – Regional Blueprint References to Aquaculture Development**
1.2.2. **Aquaculture Council of Western Australia**

Supported by the Western Australian Fishing Industry Council (WAFIC) and a Western Australian Government levy that is administered through WAFIC, the Aquaculture Council of Western Australia (ACWA) is the peak representative of the exclusive interests of the Western Australian aquaculture industry. The members of ACWA also make a direct financial contribution to the organisation and comprise 80 percent of the current gross value of production of Western Australia’s non-Maxima Pearl aquaculture, as well as organisations that support the industry.

1.2.3. **Department of Fisheries**

Pursuant to the *Fisheries Resource Management (WA) Act 1994*, the Western Australian Department of Fisheries is the lead government agency for the development and regulation of the State’s aquaculture industry. It is also the lead agency for the purposes of implementing the State’s aquaculture policy.

1.3. **The Forum**

As eluded to in Section 1.1, the Western Australian aquaculture industry is at a cross roads. The Forum Partners summarised in Section 1.2 have collaborated and pooled resources to deliver this forum, the purpose of which is to clearly define the key elements of a strategy to ensure that the Western Australian aquaculture industry is optimally positioned to build on its history and to capitalise on the opportunities facing it.

1.3.1. **Purpose and Intended Outcomes of the Forum**

The purpose of the Forum is to bring together key stakeholders in the development of a Western Australian aquaculture industry in order to establish:

- A common understanding of the history, status, challenges and immediate opportunities associated with the Western Australian aquaculture industry;
- To identify learnings from other, more established aquaculture industries in Western Australia; and
- To develop a clear pathway forward that will mitigate risks of failure and optimise the ability of the industry to capitalise on the opportunity in front of it.

It is intended that the Forum deliberations will identify:

- The nature of the pathway forward;
- The responsibility of different stakeholders in prosecuting that pathway;
- Responsibility for coordinating industry;
- The resource that is required;
- The next implementable steps in the journey.

Figure 2 below summarises the process the forum followed and its intended outcomes.
1.3.2. Attendance

Inclusive of the 14 speakers at the Forum, approximately 150 individuals participated. Figure 3 below provides an approximate breakdown of representation of the participants. Representation from Western Australian government agencies included all nine Regional Development Commissions, Department of Regional Development, Department of Fisheries, Department of State Development and the Environmental Protection Authority.
The Forum was facilitated by Russell Barnett, a partner with Australian Venture Consultants who, through consulting engagements and as a member and Chair of the former Western Australian Government Aquaculture Development Council, has a long standing association with the Western Australian aquaculture industry. A brief biography on Russell Barnett is contained in Appendix 1 to this report.

Table 3 below lists the speakers at the forum and biography of each of the speakers is contained in Appendix 1.
<table>
<thead>
<tr>
<th>Speaker</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>Mathew McGuire</td>
<td>Welcome to Country</td>
</tr>
<tr>
<td>Hon. Terry Redman, MLA, Minister for Regional Development and Lands,</td>
<td>Keynote Address</td>
</tr>
<tr>
<td>Minister Assisting the Minister for State Development and Leader of the</td>
<td></td>
</tr>
<tr>
<td>Nationals Western Australia</td>
<td></td>
</tr>
</tbody>
</table>

**Session 1: History and Status of the WA Aquaculture Industry**

| Russell Barnett, Partner, Australian Venture Consultants          | Context of Aquaculture in Western Australia                                 |
| Shane McLinden, Managing Director, Southseas Abalone               | Commercial Reality                                                         |
| Erica Starling, Managing Director, Indian Ocean Fresh Australia    | Paper Plans vs Reality                                                     |
| Craig Kestel, Managing Director, 888 Abalone                       | Overnight Success?                                                         |
| Glen Dibbin, Partner, Blue Lagoon Musels                          | Mussel Farming in Cockburn Sound                                           |

**Session 2: Commercial Experience**

| David Whyte, Group Technical Manager, Huon Aquaculture              | Huon’s Production Story                                                    |
| David Carter, Chief Executive Officer, Austral Fisheries            | Opportunities for Australia in Seafood and Scope for Aquaculture           |
| Dan Fels, Design Coordinator, Seafarms Group                        | Opportunities for Prawn Aquaculture in Western Australia                   |
| David Williams, Managing Director, Kidder Williams                  | The Realities of Aquaculture Development and Attracting Outside Investment |
| Pheroze Jungalwalla, Independent Executive Chair, National Aquaculture Council | The Importance and Impact of Strong Industry                              |

**Session 3: Effective Industry Development**

| Darren Foster, Deputy Director General, Department of Fisheries     | WA Government Plans for Aquaculture Development                            |
| Heidi Alleway, General Manager, Department of Primary Industries and Regions South Australia | The South Australian Story – How was Aquaculture Encouraged, Supported, Facilitated and Regulated |
| Patrick Hone, Executive Director, Fisheries Research Development Corporation | What is Happening Nationally in Industry Development?                     |
| Ralph Addis, Director General, Department of Regional Development   | Aquaculture and Regional Development                                       |
| Russell Barnett, Partner, Australian Venture Consultants            | What Makes Effective Industry Development?                                 |

**Session 4: Panel Discussion**

| Murray Criddle, Chairman, Mid West Development Commission          |                                                                           |
| Craig Foster, Senior Aquaculture Industry Executive                 |                                                                           |
| Darren Foster, Deputy Director General, Department of Fisheries     |                                                                           |
| Patrick Hone, Executive Director, Fisheries Research and Development Corporation |                                                                           |
| Craig Kestel, Managing Director, 888 Abalone                       |                                                                           |
| Erica Starling, Managing Director, Indian Ocean Fresh Australia    |                                                                           |
| David Whyte, Group Technical Manager, Huon Aquaculture              |                                                                           |

**Table 3 – Forum Speakers and Presentations**
Each of the presentations listed in Table 3 above is summarised in Section 2 of this report and the full presentations can be accessed by contacting Justin Fromm, Pilbara Development Commission (phone: +61 8 9185 0600 or email: pdc@pdc.wa.gov.au).
2. Forum Proceedings and Key Observations

This section summarises the presentations and addressed delivered by the speakers, as well as the key messages from each of the four sessions.

2.1. Welcome to Country

Matthew McGuire, a representative of the Wadjuk People in Western Australia’s Noongar Country welcomed the Forum to Noonga Country. Matthew highlighted the importance of aquatic resources to the Noongar people, demonstrated by a Dreaming story revolving around a location on what is now referred to as the Swan River Estuary, in close proximity to the Forum venue.

The Forum facilitator noted the aquaculture industry’s state-wide marine, freshwater and terrestrial footprint, and extended the Forum’s respects to all Traditional Owners and their elders past and present across Western Australia.

2.2. Keynote Address

The keynote address for the forum was delivered by the Honourable Terry Redman, MLA, Minister for Regional Development, Minister for Lands, Minister Assisting the Minister for State Development and Leader of the National Party Western Australia.

The key points from Minister Redman’s address are as follows:

- Aquaculture is underdone in Western Australia when compared to other states and territories
- As wild-catch fisheries continue to come under pressure, aquaculture must play a greater role in the Western Australian seafood industry
- The focus of the Regional Investment Blueprints on aquaculture is indicative of the opportunity in aquaculture development for regional Western Australia
- Several key projects – Barramundi (Kimberley), Yellowtail Kingfish (Mid West), Abalone (Great Southern and South West) and oysters (Great Southern) - are leading the way and hold significant promise
- The Department of Fisheries and the Government more widely has started to embrace aquaculture to a greater degree than it perhaps has historically, evidenced by the strategy for developing an aquaculture industry, the State’s commitment, the Kimberley and Mid West aquaculture zones, the effort to better coordinate R&D and training initiatives in aquaculture and the designation of Major Project Status to Project Sea Dragon.
- There is a desire for Regional Development, through the Regional Investment Blueprints, to help break down barriers across government and industry and to facilitate government and industry to work more closely together to support the development of an aquaculture industry.
- Aquaculture should consider itself as part of the agribusiness industry and fully engage with the ‘WA Open for Business’ platform, which will serve as a one-stop-shop for agribusiness investment in Western Australia.
2.3. Session 1: History and Status of the Western Australian Aquaculture Industry

2.3.1. Context of Aquaculture in Western Australia

The Forum facilitator delivered a brief presentation that summarised the history, current status and immediate prospects for the Western Australian aquaculture industry.

The key points raised in this presentation are as follows:

- Western Australia has one of the largest wild-catch and aquaculture fishery industries in the Nation, second only to Tasmania. However, its ratio of aquaculture to wild-catch production is the lowest in the Nation and on a seafood only basis, effectively negligible.
- Western Australia’s A$400 million wild-catch sector is dominated by the Western Rock Lobster fishery, which accounts for 70 percent of the value produced by the wild-catch sector, and its aquaculture sector is dominated by *Pinctada Maxima* pearl production.
- While the State’s Western Rock Lobster fishery has recovered in recent years, it remains vulnerable; the State’s *Pinctada Maxima* aquaculture sector has experienced a general trend of decline for at least the past decade; modest recent growth in the very small seafood aquaculture sector has been driven almost exclusively by the Cone Bay Barramundi project; and there are 234 productive aquaculture licenses in Western Australia, 80 percent of which pertain to marron, producing an average GVP of approximately A$7,600.
- Reasons commonly cited as contributing to the lack of growth in the Western Australian aquaculture industry include limited suitable sites, low nutrient waters, high capital and operating costs, investor scepticism, regulatory burden, absence of a clear species advantage, inconsistent policy and the small and fragmented nature of the industry. While these factors combine to constrain development, we probably overplay the extent to which many of these factors are significant or insurmountable barriers.
- Despite the somewhat challenged history the industry has faced in Western Australia, the emergence of sensible industry building projects along the Western Australian coast, renewed state support and cautious preliminary strategic investment interest, means that there is reason to be cautiously optimistic about the future of aquaculture in Western Australia.

2.3.2. Commercial Reality

Shane McLinden, Managing Director of Southseas Abalone, delivered a presentation summarising the key events in the development of Southseas Abalone’s aquaculture business, particularly with respect to government interaction with a view to offering some lessons for aquaculture in Western Australia.

The key points from this presentation are as follows:

- It is important that operations are able to achieve adequate economies of scale and to this end, project proponents should be provided adequate up front tenure security to sensibly expand to the required scale over time with certainty;
- A strong financial discipline designed first and foremost to achieve a shareholder return targets is important to ensure operations maintain a clear commercial focus.
- It is important that project proponents are able to achieve geographical diversity in order to mitigate location specific risks (e.g. biosecurity, weather events, metocean events etc) and to this end, active projects in a specific zone should, where reasonable, be given a form of priority in the application process pertaining to new, geographically diverse zones that can accommodate the same species.
There must be clear rules and procedures around translocation between zones that achieves the right balance between managing biodiversity risk and achieving optimal production performance.

State compensation schemes designed to mitigate the impact of a catastrophic biosecurity event on enterprise, could require that compensation funds are reinvested in the aquaculture industry to ensure that industry continues to develop.

Agencies involved in regulating the industry must adopt a development oriented culture.

2.3.3. Paper Plans Versus Reality
Erica Startling is managing director of Indian Ocean Fresh Australia, the principal industry proponent of the Mid West Yellowtail Kingfish project. Erica’s presentation provided a detailed overview of the history of the marine finfish (Mulloway and Yellowtail Kingfish) trials in Geraldton.

The key points from this presentation are as follows:

- Models are a critically important step in preparing for a trial, but it is the activities that take place through the trial and the knowledge that is gained from that process which is critically important.
- The collaboration on which the Mid West Yellowtail Kingfish trials are based is unique to the seafood industry in Western Australia. The collaboration was formed based on the mix of skills and expertise that were required to give effect to the project and to optimise the likelihood of a useful outcome, rather than just marshalling financial and practical resources that were required to give effect to the project.
- Currently aquaculture in Western Australia is an agribusiness that exhibits risks associated with agribusiness approaching the extreme end of the spectrum, which manifests itself in poor access to external capital. Because of this, the sector is being driven to a large extent by family businesses, who will progressively reduce the risks.
- The key role that government can play is ensuring quality and cost effective fingerling supply, providing certainty of tenure over aquaculture sites, continuing to provide responsive fish health services and reassuring industry and investors that it supports the industry.
- Western Australia is lagging behind South Australia, Tasmania and New South Wales with respect to supporting the aquaculture industry, with the key problem being that, from a whole-of-government perspective, Western Australian agencies are unfamiliar with the industry and its operations. There needs to be an environmental risk management approach to regulating the sector.
- Western Australia needs an aquaculture industry, because this is the only sector of the Australian seafood industry that is currently growing.
- The community at large has a right to expect environmental accountability and responsibility from operators, and we should have confidence that under the regulatory system aquaculture can be responsibly managed. To this end, the industry and community needs to use the tools that are available (science and legislative frameworks) to garner confidence in responsibly using our oceans for safe and sustainable food production alongside the it’s other uses such as transport, hydrocarbon production, recreation and leisure.

2.3.4. Overnight Success?
Craig Kestel is the Managing Director of 888 Abalone, the operator of an on-shore greenlip abalone hatchery and grow-out facility in Bremer Bay, and a director of Ocean Growth Abalone, operator of a greenlip abalone ranching operation offshore Flinder’s Bay that
acquires juvenile abalone from 888 Abalone under a joint venture arrangement. Craig delivered a presentation providing an overview of the development of both operations.

Key points from this presentation are:

- After acquiring onshore abalone hatchery and grow-out facilities from an Administrator, 888 Abalone invested considerable capital in the redevelopment of aspects of the system. The operations are now profitable with output on a solid growth trajectory.
- Ocean Grown Abalone’s abalone ranching operation is a world first and was underpinned by significant research and development undertaken over a number of years, particularly with respect to managing sometimes sectoral conflicts pertaining to different perceptions as to appropriate management of biosecurity risk associated with introducing hatchery reared stock to the ocean.
- Both operations have faced normal agribusiness and aquaculture risk and have managed to overcome adverse events and the Western Australian abalone industry now has a pathway to expansion.
- A key aspect of any aquaculture development policy and regulatory environment is mechanisms that clearly allow operations to progressively manage risk and diversify production across sites and production systems.

2.3.5. Mussel Farming in Cockburn Sound

The Forum agenda originally had Jonathan Bilton, a consultant to the Department of Fisheries’ proposed multi-species mollusc hatchery and a mollusc hatchery expert with some 30 years of experience, scheduled to present. Due to an unanticipated operational issue, Jonathan Bilton was unable to attend the Forum. In his stead, Glenn Dibbin, a partner in Blue Lagoon Mussels, the only current blue mussel producer in Cockburn Sound delivered a presentation on the Western Australian mussel sector.

The key messages from this presentation are:

- Blue mussel aquaculture is one of the longest running sectors of the Western Australian aquaculture industry having been in production in Cockburn Sound since 1988.
- The changing eco-system in Cockburn Sound is increasingly presenting production issues.
- New avenues for the growth of the sector have to be pursued.

2.3.6. Session 1: Summation

The following key issues arose from the first session of the Forum:

- **There is Scope for Improved Regulatory Efficiency and Certainty**
  A number of the presentations emphasised the need for a rapid evolution of the processes and culture of regulatory agencies responsible for the approval and management of aquaculture projects. The deficiencies are largely a function of a lack of familiarity with the industry and historically fluctuating Government commitment to the industry, but a lot can be learned from adapting the regulatory frameworks used by other jurisdictions.

- **Aquaculture is an Agribusiness with Agribusiness Risk**
  Aquaculture is a nascent sector of the Western Australian agribusiness industry. It presents all of the normal risks and commercial parameters associated with agribusiness. Because of the early stage of the industry, these risks are currently exacerbated in the case of Western Australian aquaculture, particularly when projects revolve around relatively untried species in untried production environments. The risk
can be partly mitigated by focusing on commercially demonstrated species and production systems.

- **Family Businesses are Taking the Risk**
  As a result of the exacerbated agribusiness risk and what are at the very least perceptions of regulatory uncertainty, family businesses are currently the instigators of most aquaculture projects in Western Australia.

- **The Western Australian Aquaculture Sector Demonstrates a High Innovation Intensity**
  The nascent Western Australian aquaculture industry is comprised of a small number of enterprises that are trialling new species in new production environments, and in some cases, using new production systems.

- **Collaboration is Demonstrably Important**
  Despite rhetorical commentary that the Western Australian aquaculture industry is highly fragmented, it would appear that this fragmentation is largely confined to the enthusiast and small business sector, rather than the new generation of projects. At this level of the industry, the presentations in Session 1 clearly demonstrate that across at least two contemporary projects there are high levels of collaboration between enterprises that would otherwise be *prima facie* be considered competitors, and across industry, government and the research sectors at a project level.

### 2.4. Session 2: Commercial Experience

Session 2 of the Forum was designed to acquire the perspectives of professionals with operational, investment and advocacy experience in the wider national aquaculture seafood industry.

#### 2.4.1. Huon’s Production Story

Huon Aquaculture Group Limited ("Huon") is one of the largest Atlantic Salmon producers in Tasmania and one of the largest aquaculture companies in Australia. David Whyte is the Group Technical Manager for Huon and David delivered a presentation that gave an overview of Huon’s development history and the key elements of success.

The key points from this presentation are as follows:

- Development of the Tasmanian Atlantic Salmon industry occurred in a very different context to the Western Australian aquaculture industry. Firstly, the Tasmanian industry was able to leverage expertise and technology from at least a decade of experience in Atlantic Salmon aquaculture across the globe. Secondly, there was no competition within Australian seafood markets from another red-flesh fish and the Tasmanian product was of particularly high quality.
- Despite these advantages it took Huon 17 years to grow from 900 tonnes in 1998 to 16,500 tonnes in 2015.
- Because of the significant risks it entails, translocation should only ever be considered in the context of industry survival. It carries far too significant risk to justify on a profit optimisation basis alone. In any event, translocation needs to be subject to very clear and strong biosecurity measures.
- Investors and proponents need to be cautious in relying on models to determine the viability of a farm, as real projects will perform very differently according to specific production environments.
In Tasmania, a government funded demonstration farm was a major catalyst for the development of the industry as it adequately demonstrated commercial concepts and served as a nexus for applied industry research.

- A competent and responsive fish health service is critically important.
- Effective coordination of the industry is critically important.
- Maintaining a reliable supply of high quality juveniles is critically important.

2.4.2. Opportunities for Australia in Seafood and Scope for Aquaculture

David Carter is a career seafood industry executive and is currently the Chief Executive Officer of Austral Fisheries, a wild-catch focused integrated seafood company. While Austral Fisheries is exclusively a wild-catch operation, it has, from time-to-time considered expanding into aquaculture. David’s address provided a wider seafood industry perspective into the opportunities and challenges facing aquaculture in Western Australia.

The key points from David’s address are as follows:

- While the wild-catch sector initially perceived the rapidly developing aquaculture sector as a threat, the aquaculture sector has not had as big an impact on the wild-catch sector as the macro-data would suggest. This is largely because many species that are important in seafood markets simply can’t be produced technically or economically from aquaculture systems.
- The impact on the wild-catch sector has in fact, been beneficial driving efficiencies and programs to improve the sector’s environmental credentials.
- It will be quite difficult for wild-catch operations to transition into, or even absorb aquaculture businesses, as the culture and expertise required to operate competitively in either sector is very different, particularly at the production level.
- Social license to operate is obviously an issue of paramount importance for the wild-catch sector. While it is topical from time-to-time in aquaculture, it is yet to gather the momentum it most likely will. The industry needs to be aware of this and be on the front-foot.
- A specific issue to consider is the propensity of global seafood markets to consume imported or domestic product that, in some instances, is produced from wild-catch fisheries or aquaculture operations that are not sustainably managed. As the ‘conscious consumer’ sector grows, the social license to operate for unsustainable food production practices will be progressively withdrawn. In such circumstances, there is an opportunity for sustainable wild-catch and aquaculture sectors in Australia to acquire a greater share of domestic and export seafood markets.

2.4.3. Opportunities for Prawn Aquaculture in Western Australia

Seafarms is a leading prawn aquaculture company in Australia and the proponent of the proposed Project Sea Dragon prawn farm to be located at Legune Station in the Northern Territory with significant operational supply chain links to Western Australia. Daniel Fels is the project Design Coordinator with Seafarms.

They key messages from Daniel’s presentation are as follows:

- While the production ponds for Project Sea Dragon will be located in the Northern Territory, the project will have significant operational links to Western Australia including a hatchery in Exmouth, processing plant in Kununurra and export facilities at the Port of Wyndham.
- Project Sea Dragon is an example of where most Australian aquaculture needs to be positioned, and that is large scale production of premium product. The product needs
to be premium so that it is not endeavouring to compete with the ultra-high volume low cost production segments out of Asia, and scale is required to minimise costs so that the product can remain competitive in those selective markets.

- To put this in context, despite the scale of Project Sea Dragon, at full production it will still only account for 0.1 percent of global prawn (shrimp) production.

### 2.4.4. The Realities of Aquaculture Development and Attracting Outside Investment

David Williams is an experience investment banker in the agribusiness sector, with a considerable track-record in completing major transactions in the Australian seafood and aquaculture industry. David is currently managing director of investment bank Kidder Williams.

Key points from David’s presentation are:

- In almost all instances, the development of an aquaculture industry has delivered good outcomes for business, communities and governments, but it takes a long time and a significant amount of capital.
- In the development history of almost all aquaculture industries, the initial players invest significant capital and typically generate little if any positive return on that capital. It is the next generation of investors that acquire defunct or struggling projects that make substantial returns on their investment. As such, aquaculture is not a venture that should be undertaken without the requisite expertise and a clear pathway to accessing significant capital.
- Because aquaculture is perceived as an ‘industry of the future’ it is relatively easy to raise external capital for aquaculture projects, albeit this is substantially easier in the context of merger and acquisition and later stage public and private transactions than it is in the case of earlier stage aquaculture ventures.
- The Commonwealth Government focus on developing northern Australia is a substantial opportunity for Western Australian aquaculture to gain Commonwealth support and profile.
- Australian aquaculture proponents tend to focus too much on product differentiation factors, such as ‘clean and green’ or omega-3 content, in assessing the competitiveness of Australian aquaculture produce. At the end of the day, success in aquaculture can only be underpinned by efficient production of protein and as such a competitive food conversion rate (FCR) is a key pillar to being competitive in international markets.
- No Australian government has got aquaculture policy perfect and as such, Western Australia is in a position where it can learn from the positive and negative aspects of the policy and regulatory platforms of other Australian governments to create a ‘best-practice’ policy and regulatory environment for its aquaculture industry going forward.

### 2.4.5. The Importance and Impact of Strong Industry

Pheroze Jungulwalla has had an extensive career in the Tasmanian Atlantic Salmon industry involved in, among other things, the development and operation of commercial hatcheries and oversight of industry R&D programs since the commencement of the industry in the mid-1980s. Since the early 2000’s Pheroze has been heavily involved in aquaculture industry associations and advocacy and is currently the Independent Executive Chair of the Australian National Aquaculture Association. Pheroze’s presentation provided detail on the development of the Tasmanian Atlantic Salmon industry and the role of strong industry coordination and advocacy.
The key points from Pheroze’s presentation are as follows:

- Membership of the National Aquaculture Council includes various sector and State peak bodies, as well as a limited number of corporate aquaculture producers and service companies.
- The role of the National Aquaculture Council is to bring to the Government’s policy and regulatory bureaucracies an aggregate aquaculture industry position in several key areas affecting the sustainable growth and profitability of the industry at a national level. Examples of areas of focus of the National Aquaculture Council are biosecurity policy and regulation, aquatic animal health and welfare, trade and market access, maritime safety and cross industry links.
- There is currently a Commonwealth funded project to establish a national peak body representing the aggregated interests of the aquaculture, wild-catch and post-harvest sectors of the Australian seafood industry, whereby an industry led task force is currently developing a proposed structure and funding model for such a peak body. If supported by all sectors by 31 December 2016, then this multi-sector peak body could be operational by July 2017.
- There is commercial and lobbying advantage in having industry collaboration on pre-competitive issues of common aggregate interest.
- The role of any industry association will vary with composition of membership, whereby the wider the membership the more complex the role of the association and the less it is able to focus on individual member needs.
- It is very important to define which type of issues an industry body will not handle on behalf of its members; maintain that discipline in practice; and have a dispute resolution method in place.

2.4.6. Session 2: Summation
The key messages from Session 2 are as follows:

- **Development of an Aquaculture Industry of Scale Takes Considerable Time and Capital**
  History in Australia demonstrates that the development of an aquaculture industry of substance occurs, as is the case with most primary industry, over a decadal scale. Furthermore, the growth cycles of a new aquaculture industry consume considerable capital and are typically characterised by enterprise failure and/or consolidation early in the industry’s life, with later entrants to the industry receiving superior returns on investment to the pioneers, albeit this is not always the case.

- **There is Opportunity for Aquaculture in Capital Markets**
  The perception that aquaculture is an ‘industry of the future’, combined with generally positive investor sentiment associated with the agrifood sector in Australia and the Commonwealth focus on developing northern Australia, presents an opportunity for aquaculture in external capital markets. However, raising external capital for earlier stage aquaculture ventures is notably more difficult than for merger and acquisition or later stage projects.

- **Translocation Policy Should be Developed with Caution**
  While it is noted that returns can be optimised through the translocation of species from other regions, the biosecurity risk means that this should only be contemplated in extraordinary circumstances such as imminent industry failure. An alternative view is that translocation of superior genetics of a native species, or in the case of a closed aquaculture production system, an introduced species, will, assuming adequate biosecurity management procedures, be key to developing a competitive industry in many species sectors.
Fishing isn’t Farming
With the exception of certain aspects of marketing and later stage downstream processing, there is very little similarity in culture, operations or skill requirements between the wild-catch sector and the aquaculture sector. For this reason, it will likely prove challenging for wild-catch companies to diversify into aquaculture operations.

Scale is Critically Important
Achieving production scale is critically important to the success of aquaculture in Australia. Scale is necessary to combat high unit costs (i.e. there is a need to achieve economies of scale) and to provide adequate volumes to be an effective competitor in major national and international markets. This fact underpins a need to focus on efficient production of protein (measured by metrics such as food conversion ratio) as a key performance indicator of an aquaculture enterprise. Other factors such as omega-3 content, clean-green growing environment are effective product differentiators, but they will not in themselves determine the competitiveness of an aquaculture project.

Quality Hatchery and Fish Health Services are Paramount
Reliable and cost effective access to quality juvenile fish and fish health diagnostic, monitoring and treatment advisory services are critical to underpinning the economics and managing risk associated with an aquaculture industry.

Need to be on the Front Foot with Social License to Operate
Other than a few notable exceptions, the Western Australian aquaculture industry (and indeed the Australian aquaculture industry more broadly) has managed to avoid any significant social license to operate issues. Where they have emerged they have typically been ‘micro-interest” interactions and usually revolve around conflicting social usage of the marine estate. As the industry grows, its social license to operate landscape will become more complex and it will attract a greater public interest. As a new industry, the Western Australian aquaculture industry has the opportunity to be proactive from the outset with respect to maintaining social license to operate, learning from the various challenges that other primary industries have faced in this respect. It is critically important, that as the Western Australian aquaculture industry grows, so does community support for the industry. To this end, the industry must make a concerted effort to engage with the community positively and meet its expectations across environment and social dimensions.

No Australian Government has the Perfect Policy Solution
Despite particularly Tasmania and South Australia often heralded as having the optimal aquaculture development and regulatory frameworks in Australia, there are still aspects of the policy and regulatory instruments in both of these jurisdictions that could be improved, or which would have been designed differently with the benefit of hindsight. The same applied for all state and territory governments in Australia. Western Australia has the opportunity to build on best-practice with the benefit of this hindsight.

Focused, Coordinated and Effective Industry Advocacy is Important
Like most industry sectors in Australia, the Australian aquaculture industry has numerous industry associations whose members represent different species sectors and/or geographic locations. As a small sector, the Western Australian aquaculture industry’s voice on key issues can often become diluted among competing voices and issues. It is important that industry organisations and their members remain focused on key issues and coordinate their advocacy activities so that the sector has an optimally powerful voice on key issues.
2.5. **Session 3: Effective Industry Development**

2.5.1. **Western Australian Government Plans for Aquaculture Development**

Darren Foster is the Deputy Director General of the Western Australian Department of Fisheries with responsibility for aquaculture development and regulation in the State. Darren delivered a presentation covering key aspects of the Department’s contemporary approach to aquaculture.

Key points from this presentation are:

- The interaction between the State Government and the Western Australian aquaculture industry has a very long history, whereby the State has made a considerable investment in supporting infrastructure and funded the production of a very large number of plans and strategies. This makes it difficult to make a case for further State Government support for the sector among some key stakeholders in the State Government.
- Going forward, we need a simple, focused, realistically executable plan that has a high probability of success, acknowledging that it will take around a decade to achieve meaningful outcomes.
- Project approval from the Western Australian Environmental Protection Authority while onerous is a significant and ‘bankable’ approval.
- As the lead agency for aquaculture development, the Department has put in place a number of measures to support development of the contemporary industry including a program to reduce red-tape and transition toward a contemporary approvals and management framework, the establishment of aquaculture development zones, provision of fish health support, the development of a multi-species mollusc hatchery, working with the Department of Training and Workforce Development to ensure that State hatchery and applied research infrastructure that supports the industry is sustainable, changes to legislation and an overall cultural development program at the Department.

2.5.2. **The South Australian Story – How was Aquaculture Encouraged, Supported, Facilitated and Regulated?**

Heidi Alleway is the General Manager of the Aquaculture Policy and Environment Unit with the Department of Primary Industries and Regions South Australia (PIRSA). Heidi delivered a presentation outlining the key aspects of South Australia’s aquaculture development policy and regulation.

The key points from Heidi’s presentation are:

- A unique aspect of South Australia’s regulatory environment with respect to aquaculture is that as of 2001, aquaculture regulation was excised from the Fisheries Act 1982 and a specific act designed to meet the needs of a rapidly expanding industry was proclaimed, the Aquaculture Act (SA) 2001. South Australia is the only state in Australia whose aquaculture industry is regulated by an aquaculture specific act and associated regulations. The Aquaculture Regulation (SA) 2005, provide specificity in management.
- An important aspect of the South Australian regulatory environment is the existence of two statutory advisory bodies – Aquaculture Tenure Allocation Board and Aquaculture Advisory Committee – which provide transparency on policy and policy decisions, and ensure expertise and stakeholder interests are represented in policy and regulatory decisions.
Another important aspect is that PIRSA acts as a one-stop-shop for project assessments and approvals under a system of statutory referrals across multiple relevant acts such as Environment Protection Act (SA) 1993, Native Title (South Australia) Act (SA) 1994 and Development Act (SA) 1993.

Aquaculture zoning is an important tool to provide investment confidence, certainty to communities and industry, flexibility to industry and to allow co-existence of aquaculture with other activities.

A large portion of the South Australian marine estate is the subject of marine reserves (approximately 45 percent of State waters). The South Australian aquaculture industry produces GVP of approximately A$225 million from 0.07 percent of State waters.

Aquaculture regulation in South Australia is continually evolving, including in the form of regular changes to the Act and Regulations.

2.5.3. What is Happening Nationally in Industry Development?

Patrick Hone is the Executive Director of the Fisheries Research Development Corporation (FRDC), an industry levy supported organisation established under the Primary Industries Research and Development Act (Cth) 1989. Patrick delivered a presentation providing a synopsis of aquaculture industry development activity currently occurring across Australia, together with the FRDC's role in that development.

The key points from this presentation are as follows:

- We sometimes need to remind the government and community that primary industries are still the backbone of the Australian economy and underpin the social fabric of regional Australia.
- We shouldn’t think of aquaculture as an alternative to the wild-catch sector. There is still considerable growth opportunity in responsibly managed sustainable wild-catch fisheries.
- Across Australia there are currently 42 species of finfish, 15 species of crustacean, 26 species of mollusc and 7 other species (90 species in total) that are the subject of aquaculture operations or development projects. Furthermore, all state and territory governments have or have had significant investments in aquaculture development.
- Western Australia is not alone in underperforming in aquaculture. The entire nation should have a larger industry than it has at present.
- The current development focus is reasonable across the aquaculture, commercial and wild-catch sectors and to a lesser extent the recreational sector. We are substantially underperforming in customary fishing and aquaculture development.
- There are three relevant national R&D priorities – (a) ensuring that Australian fishing and aquaculture products are sustainable and acknowledged to be so; (b) improving productivity and profitability of fishing and aquaculture; and (c) developing new and emerging aquaculture growth opportunities.
- It is critically important that industry is leading the industry development pathway.
- Aquaculture zones are an important tool, but only effective if they are responsive to industry and can be put in place quickly.
- Governments need to be very careful subsidising hatcheries. At the very least the government needs to have a clear exit strategy in place.
The key points from this presentation are as follows:

- The Department of Regional Development has adopted a portfolio approach to developing and implementing regional development strategy that is focused on creating jobs, driving economic growth and building capacity in regions.
- Royalties for Regions has transformed regional Western Australia through the investment of over A$6.9 billion across 3,700 projects.
- The main purpose of Royalties for Regions investment is to de-risk appropriate projects, create common-use infrastructure and attract private capital and capability.
- Aquaculture is highlighted in the majority of the Regional Investment Blueprints and as such is likely to play a major role in regional development in Western Australia going forward.

2.5.5. What Makes Effective Industry Development?

The Facilitator delivered the final presentation in Session 3. This presentation provided a high-level overview of the basic ingredients for successful regional development from a theoretical perspective.

The key points from this presentation are:

- Competitive advantage is key to successful regional development and for competitive advantage to be sustainable, it is ideally underpinned by absolute or comparative advantage in a specific market.
- While regional development specific policy can play an important role in developing new sustainably competitive regional industries, it is the broader business policy (taxation, trade, infrastructure etc policy) that is often more important.
- The Pilbara iron ore industry is a good case study in the importance of absolute and/or comparative advantage in successful regional development, highlighting the key natural resource, market, investment and policy imperatives that can underwrite that advantage and the fact that even when the advantage exists new industry development can take a long time.
- Western Australia’s uniqueness with respect to natural resource characteristics that might contribute to comparative advantage in aquaculture are relatively low nutrient waters, vast tracts of coastal open ocean, significant climatic variation along the coast and native species diversity.
- Proximity to Asia is a double edge sword for Australian aquaculture – Asian countries have absolute advantage in almost all aquaculture and Australia is a relatively high cost jurisdiction; and there is strong competition for Asian seafood markets. On the other hand, Asia has the fastest growing middle class markets and will be the largest middle class market by 2030, Western Australia has established trade relationships with most Asian nations and many Asian markets have demonstrated an appetite for Western Australian produce.
- Infrastructure, particularly, cold-chain infrastructure, is arguably the single biggest challenge facing Western Australian aquaculture.
- Industry development policy (including Regional Development Policy) in Australia (and Western Australia) is likely to always be anchored in principles of Laissez Fair.
- Regional development is challenging in Western Australia, complicated by vast geographic distance, diversity of industry and community interests, diverse government agency responsibilities and the presence of regionalism in rural politics.
- We need to get better at (a) identifying competitive advantage at the regional level and targeting investment accordingly; and (b) coordinating and leveraging infrastructure investment across sectors and across the State.
2.5.6. Session 3 Summation

The following are key points from Session 4:

- **There has been a longstanding association between the Western Australian Government and the State’s aquaculture industry – this is the last opportunity**
  While it can be reasonably argued that historical Western Australian Government policy and regulation targeted at the State’s aquaculture industry could have been more optimally designed and prosecuted, the fact remains that the Western Australian Government has invested considerable resources in the development of the Western Australian aquaculture industry over the course of decades. Given the industry is still a negligible contributor to Gross State Product, employment and exports it remains difficult to convince some stakeholders in Government that support should continue. It is important that going forward the industry and government pursue a simple, focused and achievable development strategy and that support is maintained for a period that is adequate to see a transition to a sustainable industry.

- **The Lead Agency is Transitioning to a More Contemporary Approach to Regulating Aquaculture Development**
  There is recognition within the Department of Fisheries that it needs to adopt a more contemporary approach to the development of an aquaculture industry that includes a reduction of unnecessary or overly-burdensome regulation and a change in culture that is more integrated with and responsive to industry.

- **We Worry Too Much About the Marine Conservation Estate**
  The declaration of marine conservation reserves can often result in a degree of hysteria from competing industrial uses of the marine estate. In some cases the concern is reasonable, but in the case of aquaculture it needs to be considered that significant GVP can be produced by marine aquaculture from a very small footprint. For example, conservation estates comprise approximately 45 percent of the South Australian marine estate, but its marine aquaculture industry produces GVP of approximately A$225 million from 0.7 percent of the area of the South Australian marine estate.

- **Aquaculture Development Policy and Regulation is Evolving Across the Nation**
  Developing an optimal policy and regulatory environment for the aquaculture industry is a work-in-progress across the Nation. Even in South Australia, changes to aquaculture legislation and regulations are reasonably frequent. The evolving nature of aquaculture policy and regulation is a function of both meeting the needs of a rapidly developing industry, as well as responding to lessons learned from practical regulatory experience in a relatively new field.

- **Transparency, Certainty and Simplicity is Key to an Effective Policy and Regulatory Environment**
  The fundamental principle that should underpin any aquaculture development policy and regulatory framework is optimisation of transparency, certainty and simplicity of processes that lead to approvals and other decisions.

- **There is Still Considerable Prospect for Growth in the Nation’s Wild Catch Industry**
  Despite rhetorical commentary to the contrary, there remains considerable scope for growth and efficiency improvement in the wild-catch sector in Australia, primarily as a result of it being responsibly regulated as a sustainable fishery. As such, aquaculture and wild-catch should be considered in the context of co-existence rather than aquaculture being a threat to the longer-term sustainability of the wild-catch sector.
In Any Aquaculture Development Framework Industry Needs to Lead, and Direct Investment from Government Should be Limited to Areas of Demonstrable Market Failure

It is important that government policy is following the development lead of industry and not adopting a ‘build-and-they-will-come’ approach to industry development. Similarly, government direct investment should be limited to areas of market-failure and kept to an absolute minimum.

Royalties for Regions Presents a Significant Opportunity for the State’s Nascent Aquaculture Industry, Provided it Can Demonstrate to be a Competitive Industry

Access to resources from the Western Australian Government’s Royalties for Regions program, combined with the identification of aquaculture as an important pathway for future growth in almost all of the Regions that comprise Western Australia, is a significant opportunity for the nascent Western Australian aquaculture industry. The ability of the aquaculture industry to capitalise on this opportunity will be a function of its competitiveness with many other regional development opportunities.

2.6. Session 4: Priorities for Aquaculture in Western Australia – Where Does the Focus need to be Over the Next 5 to 10 Years?

The final session of the Forum revolved around a relatively informal panel discussion that worked through a series of questions and scenarios directed at specific panellists by the Forum Facilitator, together with opportunity for Forum participants to comment and direct additional questions to the panellists.

The panel members were as follows:

- Hon Murray Criddle, Chairman, Mid West Development Commission
- Craig Foster
- Darren Foster, Deputy Director General, Department of Fisheries
- Patrick Hone, Executive Director, Fisheries Research and Development Corporation
- Craig Kestel, Managing Director, 888 Abalone
- Erica Starling, Managing Director, Indian Ocean Fresh Australia
- David Whyte, Group Technical Manager, Huon Aquaculture

The panel discussion identified a number of key elements that are necessary components of an effective Western Australian aquaculture industry development strategy. These are as follows:

- The strategy must be a clear, simply pathway the necessity of the components of which are obvious and that is determined and led by industry.
- Both industry and government must find the best people to work on projects irrespective of where they might be geographically located.
- There must be a sustained (approximately 10 year) multi-stakeholder (industry, government and training and research sector) commitment to that strategy and to this end, the plan must be one for which the necessary government support will survive changes in government leadership and changes of government.
- That strategy needs to include an active communications program designed to better educate the wider community on aquaculture, particularly with respect to dispelling myths associated with the industry.
• There must be a transition to transparency and certainty in departmental and inter-departmental decision making in all aspects of approvals and regulatory decision-making that pertain to aquaculture projects.
• Tenure security is paramount and the identification of new zones must be led by industry.
• Project approvals processes must be as simple and predictable as possible.
• Industry should be supported by ‘centres-of-excellence’ in key areas such as juvenile supply and fish health.
• From a regulatory and policy perspective, the sector should be managed according to species, rather than zones, and there should be cross-departmental teams based on species.
• It is important across all facets of research and development that is supporting regulatory or operating decisions, that efforts aren’t parochial and that we seek to learn and leverage from new knowledge already created in different regions and across different species to the greatest degree possible.
• Industry and government need to send a clear message to communities, capital markets and the wider seafood industry that aquaculture is a good industry for the State to have and that the State wants the industry.
• Training resources currently targeted at the industry, need to be redirected to specific training that the industry needs.
• Direct subsidisation of projects and infrastructure should be limited to areas of market failure with a clear exit strategy for government and the use of concessional loans considered as a mechanism for lowering private sector investment hurdle rates.
• Government and industry must make a greater effort to achieve meaningful Aboriginal participation in the industry workforce and in enterprise ownership.
• The level of financial commitment from the State that is required to give effect to an economically sustainable Western Australian aquaculture culture industry is in the order of A$20 to A$50 million of capital and operating expenditure over 10 years, with a significant portion of this investment likely to be required to be ‘front-loaded’.

2.7. Forum Close

The Forum was officially closed by Hon. Matt Taylor, MLA, Parliamentary Secretary to the Minister for State Development, Innovation and Finance in the Western Australian Government. With a marine science degree and qualifications in aquaculture, Matt Taylor has been a strong advocate for the Western Australian aquaculture industry during his time in parliament.

Matt thanked the Forum Partners for the Forum initiative, which he noted was a very high quality event and an important event for the future of aquaculture in Western Australia.
3. Conclusions and Pathway Forward

The presentations in Sessions 1, 2 and 3 and the discussion in Session 4 clearly identified several key elements that necessarily must underpin a Western Australian aquaculture development strategy going forward.

Participants in the Forum were given an undertaking that this report would highlight key aspects of a strategy for the progressing the Western Australian aquaculture industry as a basis for further discussion and refinement. Figure 4 overleaf outlines the key elements of a Western Australian aquaculture industry development plan, assign responsibilities for those elements and proposes timelines for giving effect to those elements. The purpose of this outline is merely to define areas of focus for the plan for further discussion, detail and refinement and to create a sense of urgency.

The last comments from the panelists in Session 4 were in the form of a recommendation to the Western Australian aquaculture industry and government and were unanimously along the lines of:

‘Set the plan, commit to the plan and get on with it!’
Industry agreed prioritisation of key species focus based on comparative advantage in key domestic and regional seafood markets. Ensure that ACWA members are aligned on the focus and that ACWA maintains a strong leadership voice in promoting the focus.

Transition to a contemporary approvals and regulatory framework. Rapidly progress the current red-tape reduction initiative. Implement transparency in intra and inter departmental processes and decision-making. Progress lead agency cultural change program. Work with industry to determine new aquaculture zones.

Give effect to rationalisation and revitalisation of core State finfish hatchery and applied research infrastructure. Establishment of multi-species mollusc hatchery. Enhanced resourcing of Department of Fisheries Fish Health Unit to continue to support the aquaculture industry. Engage the R&D services of the national and international aquaculture innovation ecosystem.

Based on the sector prioritisation, coordination and marshalling of regional development resources to support the key sectors, address market failure (help de-risk) and optimise regional development benefits. Clearly articulate and differentiate the role of small-scale aquaculture in regional communities. Develop a strategy for greater Aboriginal participation in the aquaculture industry.

Focus State training and education investment on skill requirements specified by industry. Work with Aboriginal leadership (particularly in regional Western Australia) to grow Aboriginal participation in the aquaculture workforce and enterprise ownership, as well as in industry leadership.

Develop and implement a community targeted communications strategy that promotes aquaculture as a desirable and sustainable primary industry, educates the community on the industry and promotes aquaculture produced seafood. Develop and implement a seafood industry and capital markets targeted communications strategy that promotes opportunities in the Western Australian aquaculture through ‘WA Open for Business’ and other channels, and clearly demonstrates Western Australian Government support for the industry.
Appendix 1: Speaker Biographies

Ralph Addis, Director General, Department of Regional Development

Ralph was appointed as Director General of the Department of Regional Development in November 2014. He is currently involved with the oversight of the State Government’s Regional Development agenda, which aims to build the socio-economic foundations for development, drive growth, and attract new investment, as a key to the future prosperity of our regions.

Previously, Mr Addis was founding CEO of Wunan, an Aboriginal development agency in the Kimberley committed to providing Aboriginal people with opportunity through education, housing, and employment, where he helped build significant commercial assets, a major regional employment services business, and the innovative Transitional Housing model. He also chaired the Kimberley Development Commission for two years and held roles with the WA Regional Development Council and the WA Regional Development Trust.

He is a chartered accountant and economist.

Heidi Alleway, General Manager, Department of Primary Industries and Regions South Australia

Heidi Alleway is the General Manager of the Aquaculture Policy and Environment Unit with the South Australian Government department of Primary Industries and Regions SA, and a researcher affiliated with the University of Adelaide. Heidi has worked in public service for over ten years, with experience spanning biosecurity, natural resource management, marine ecology and fisheries, including fisheries of the Pacific Islands. She now oversees a team of staff that delivers strategic policy initiatives, regulated services, and environmental assessment and monitoring for the aquaculture industry in South Australia.

Heidi’s research through the University of Adelaide centers on the identification and reconstruction of past marine ecological baselines, a focus she has developed through collaborations with a range of Government and Non-Government agencies and her interest in applying research to inform management and policy. One of Heidi’s recent research outcomes was the identification of extensive historical loss of native oyster reefs across the southern Australian coastline. This research has initiated the development of a statewide shellfish reef restoration program, as well as partnerships and investment, for its implementation. Because of her collaborative, effective and inspired approach to marine natural resource management Heidi has been previously awarded the Young South Australian of the Year and a South Australian Young Achiever Award.

Russell Barnett, Partner, Australian Venture Consultants

Russell has approximately 20 years of experience in complex policy, strategic and operational analysis across a range of industries in the Australasian and Asia Pacific Region. Russell’s principal focus is the primary and allied industries, where he has led significant analytical and strategic planning projects for industry and public sector clients on issues as diverse as workforce dynamics, taxation, strategic R&D planning and regional development. As a result of several commercial, strategic and policy related engagements with industry and government clients, as well as a six year tenure on the Western Australian Government’s former
Aquaculture Development Council, including 18 months as its Chair, Russell has had the luxury of developing independent insights into the opportunities and challenges facing the Western Australian aquaculture industry.

David Carter, Chief Executive Officer, Austral Fisheries

As the Chief Executive Officer of a major Australian commercial fishing business that has looked at numerous opportunities in aquaculture, our next speaker is able to provide a unique lens over the commercial realities of Western Australian aquaculture within the global seafood industry landscape.

David Carter has a science degree with a zoology major from Melbourne University and has over 35 years experience in the seafood business. Since leaving University he has been continuously employed with Austral Fisheries and involved in science policy, sales and marketing and is now as its Chief Executive Officer. Through Austral he has had the opportunity to travel widely and engage with many levels of the international seafood industry, including aquaculture enterprise.

Hon. Murray Criddle

Murray is a primary producer and a retired Member of the Western Australian Parliament. He was Member for the Agricultural Region from 1993 until his resignation in 2008 and Minister for Transport from 1998 to 2001. During his time in Parliament Murray was a member of a number of Standing Committees including Estimates and Financial Operations, Ecology and Sustainable Development, and Public Administration and Finance. He was also a member of a number of Select Committees including Select Committee for Native Title and Select Committee for Cape Range National Park and Ningaloo Marine Park. Murray was a Ministerial appointment to the Commission Board in 2009 as Chairman.

Glenn Dibbin, Partner, Blue Lagoon Mussels

Glenn Dibbin is a partner in Blue Lagoon Mussels and long-term farmer of blue mussels in Cockburn Sound and following a series of acquisitions completed last year, the only remaining producer of blue mussels in Western Australia. Blue Lagoon Mussels has been a strong industry advocate for the Albany multi-species hatchery that was recently announced. Glenn is also a board member of the Aquaculture Council of Western Australia.

Daniel Fels, Design Coordinator, Seafarms

Dan Fels is the Design Coordinator with Seafarms. Dan has experience in the areas of business development, market research, economics, and research and development in agriculture and aquaculture. His professional experience within the agricultural industry includes business planning, modelling, forecasting and providing market sensitive management strategies and action plans.

Craig Foster

Craig is a seasoned aquaculture industry executive. He graduated as a veterinarian, and has second degree concentrating on fish nutrition. He managed SALTAS research and development for a number of years, and is a former Managing Director of Skretting and Marine Harvest in Australia and former Chief Executive Officer of Clean Seas Tuna Ltd. His experience pertains mainly in finfish areas, particularly salmon, trout, yellowtail kingfish, southern bluefin tuna and barramundi.
Darren Foster, Deputy Director General, Department of Fisheries

Darren Foster has been a senior policy and strategy adviser in Commonwealth, State and local governments for 30 years in areas as diverse as Environment, Treasury and Finance; Energy; Health; Education and Training; Tourism; Racing and Gaming and Native Title. He has been Director of Strategic Policy and Planning in the Office of the Environmental Protection Authority (OEPA), playing a lead role in approval reforms and in negotiations with the Commonwealth Government on environmental assessment and approvals agreements. In late 2015 he was appointed Deputy Director General of the Department of Fisheries, with responsibility for aquaculture, fisheries management, legal services, environment and biosecurity.

Patrick Hone, Executive Director, Fisheries Research and Development Corporation

Patrick has extensive knowledge of all sectors of the fishing industry. Over the last 18 years at FRDC Patrick has played a key role in the planning, management and funding of fisheries related research and development in Australia. Prior to FRDC, Patrick played a lead role in the science for the development of several significant aquaculture industry developments, including Southern Bluefin Tuna, Pacific Oyster, abalone and mussel aquaculture in South Australia.

Pheroze Jungulwalla, Independent Executive Chair, National Aquaculture Council

Since 2011 Pheroze Jungalwalla has served as the Independent Executive Chair of the National Aquaculture Council (NAC), the peak industry body of the Australian aquaculture industry. He is semi-retired but continues to operate the private consultancy Access Aquaculture, and serves on boards and committees of other national bodies associated with strategic aspects of aquaculture development.

After graduating in 1975, the first decade of Pheroze’s professional career was occupied with managing and then designing and establishing trout farms, experimenting with growing trout in sea water, and operating an oyster and mussel farm. In 1985, he was appointed as Manager of the newly formed salmon hatchery company Saltas, and over the next few years he became heavily involved in the design, construction, and establishment of two state-of-the-art salmon hatcheries for that company. Whilst at Saltas Pheroze was involved with a number of state and national committees concerned with aquaculture research and fish health. Pheroze moved to the salmon farming company Tassal in 1996 as Manager of that company’s R&D program, but his role was expanded to include industry representation on a wider range of national organisations and committees involved with aquaculture. From 2003 to 2011 Pheroze held the position of Executive Officer of the Tasmanian Salmonid Growers Association (TSGA); in that role he was involved with wide range of strategic issues of importance to the salmonid industry.

Craig Kestel, Managing Director, 888 Abalone

Craig Kestel has been the Managing Director of 888 Abalone Pty Ltd for 6 years, WA’s largest land based aquaculture venture and only Abalone hatchery. The family business has managed to turn around the fortunes of Abalone farming in WA to become a profitable business within 4 years. He is also a founding and current Executive Director of Ocean Grown Abalone Pty Ltd and is helping forge the path of the next generation of Abalone farms, Ocean Ranches.

His formal qualifications include a Business Degree from Curtin University with a double major in management and marketing. His past experience include managing small business in tourism and experience within a large company at Blue scope steel. Craig is also an active
committee member of the Aquaculture Council of Western Australia and a committee member of the Abalone Growers Association of Australia.

**Shane McLinden, Managing Director, Southseas Abalone**

Shane is the founding Director of Southseas Abalone and now has over 15 years of experience in the aquaculture industry with operations in 3 states. He has been involved in capital raisings, business procurement, farm management, R&D, and marketing activities. Shane is also the former founding Chairman of the Australian Abalone Growers Association, a former Director of National Aquaculture Council and has sat on the Aquaculture Council of WA for 5 years.

**Hon. Terry Redman, MLA**

Hon. Terry Redman, MLA has been a member of the Western Australian Legislative Assembly since 2005 representing the electorates of Stirling and Blackwood-Stirling. He is the Leader of the National Party in Western Australia and Minister for Regional Development; Lands and Minister Assisting the Minister for State Development in the current Western Australian Government.

**Erica Starling, Managing Director, Indian Ocean Fresh Australia**

Erica has long been involved in the seafood industry in Geraldton primarily in processing, sales and exporting of mainly tuna longlining products and lobster processing and sales, as well as being part of her family’s seafood catching business. In the late 90’s there was a shift to aquaculture, with pearl farming commencing at the Abrolhos islands as well as an interest in developing tuna farming, culminating in approvals being granted for a large marine finfish licence at the Abrolhos in 2003 with her family company.

In 2008 Erica commenced pilot trials in the aquaculture of Mulloway and subsequently Yellowtail Kingfish and her company is the lead industry partner for the Royalties for Region Yellowtail Kingfish Trials with the MWDC. The second trial that commenced in October 2015 is currently underway and is the precursor to larger scale developments in the Midwest Region.

Erica has been involved in various State and Commonwealth industry and government management advisory bodies for tuna, rock lobster and aquaculture over a number of years. She was also an inaugural board member of the Australian Seafood Cooperative Research Centre (CRC) and a previous winner of the RIRDC Rural Women’s Award for Western Australia. Erica has an MBA from Curtin Graduate School of Business and is a member of the AIM(WA) & AICD.

**David Williams, Managing Director, Kidder Williams**

David Williams is Managing Director of the Investment Bank Kidder Williams Ltd, which specialises in Mergers & Acquisitions and Capital Raisings in Agriculture, Food and Beverages.

He has advised many of Australia’s largest food and agriculture companies including Incitec-Pivot, Australian Wheat Board, CSR, Bega, Nufarm, SPC, and Select Harvest. He has advised on the sale of many of Australia’s leading seafood companies including Australia’s largest abalone aquaculture business Jade Tiger Abalone, Australia’s largest prawn aquaculture business Seafarm and Clamms Seafood, one of the largest seafood wholesalers in the country.

He is not just an Adviser; he is prepared to back himself. He bought the bankrupt salmon producer Tassal for $42m. He refinanced the company and listed it on the ASX turning the business around and merging it with its closest competitor to create Australia’s largest...
aquaculture company. Tassal is now capitalised at nearly $600 million. He is also one of the largest owners of water in Tasmania, but he owns no land. When the Tasmanian irrigation system faltered through lack of farmer interest he stepped in and bought all the remaining water to allow the scheme to progress. In the meantime, the price of water has increased more than 50 per cent.

David Whyte, Group Technical Manager, Huon Aquaculture

David Whyte is the Group Technical Manager at Huon Aquaculture, a leader in the Tasmania salmon industry. He is responsible for new leases and new species development, sustainability projects and quality certification. He has a BSc in Marine Biology and a Postgraduate Diploma in Ecology and Behaviour. On completing his formal education in 1986 he started working for Marine Harvest in Scotland – the world’s largest salmon farming company and in 2001, moved to Tasmania. In his 30 years in aquaculture, he has worked in marine and freshwater fish production, feeding management, health and environmental management, research and development, feed formulation, feed manufacture, quality management, and even sales and marketing.