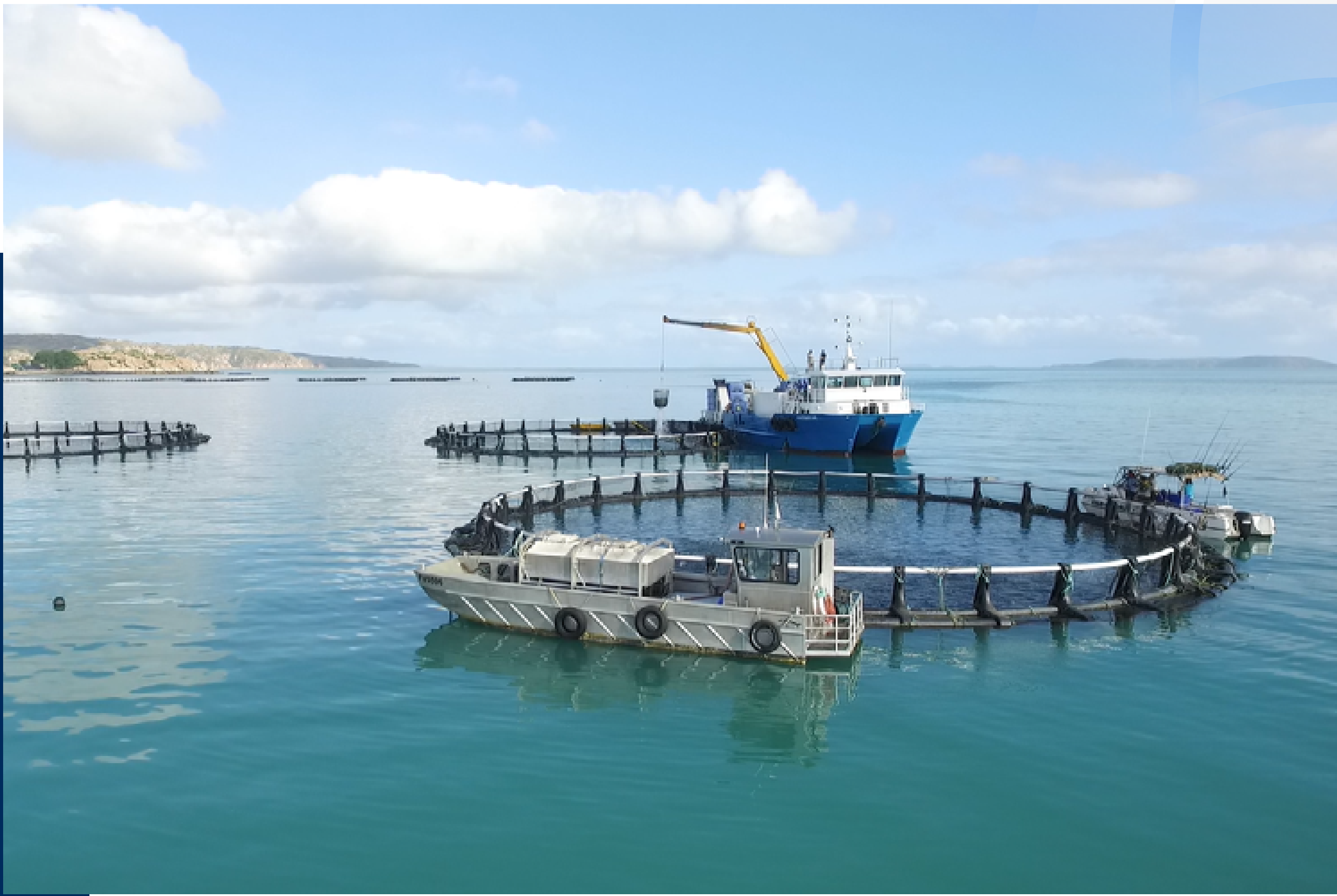
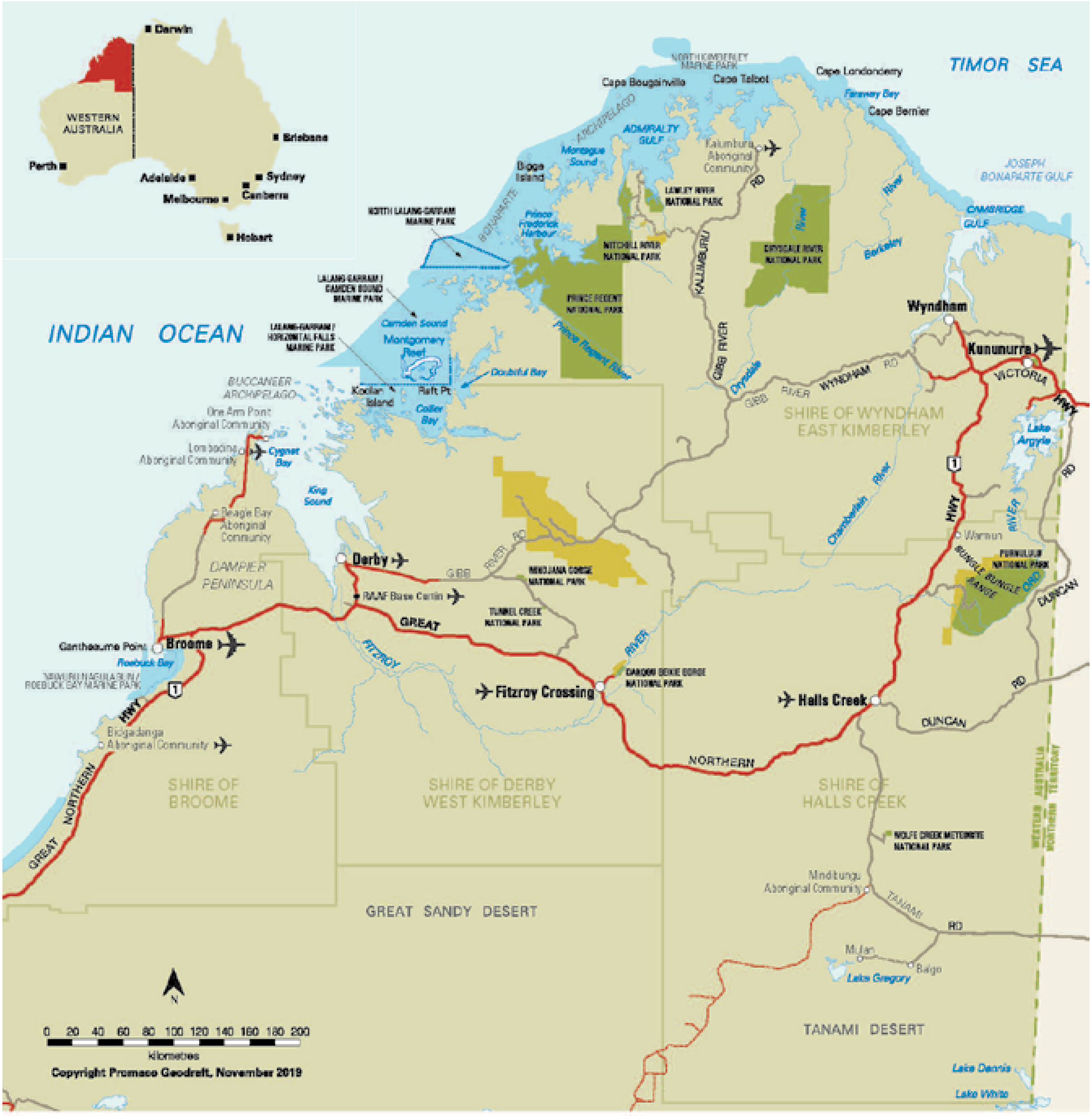
Regional Development Australia
KIMBERLEY



Aquaculture Industry

www.rdakimberley.com.au

Map of the Kimberley Region



Legend

- Sealed major road
- Sealed minor road
- Unsealed road
- 4WD track
- 4WD track only
- National highway
- National route
- Marine park boundary
- Reef
- Conservation park
- Marine park
- National park
- Airport
- Local Government Area boundary

Approximate driving distances (km)

	Perth GNH	Perth NWCH	Broome	Derby	Fitzroy Crossing	Halls Creek	Wyndham	Kununurra	Darwin
Perth GNH	-	-	2237	2391	2565	2843	3197	3202	4039
Perth NWCH	-	-	2374	2528	2701	2990	3345	3349	4176
Broome	2237	2374	-	221	395	683	1037	1042	1869
Derby	2391	2528	221	-	259	547	894	899	1733
Fitzroy Crossing	2565	2701	395	259	-	289	642	647	1474
Halls Creek	2843	2990	683	547	289	-	354	359	1186
Wyndham	3197	3345	1037	894	642	354	-	100	929
Kununurra	3202	3349	1042	899	647	359	100	-	829
Darwin	4039	4176	1869	1733	1474	1186	929	829	-

GNH = Great Northern Highway, NWCH = North West Coastal Highway

Executive Summary

This regional brief outlines the state of the Aquaculture industry, its opportunities, and its challenges and highlights recommendations to enable long term sustainable growth of the sector for the betterment of the Kimberley and its people.

The aquaculture industry contributes $34.4M[1] to the GRP. Main industry sectors are pearling and barramundi farming in the west kimberley , with opportunity for large scale farmed prawns in the east Kimberley.

The region's natural advantage stems from pristine warm waters, macro tidal ecosystem, relative isolation important for biosecurity, predictable warm climate, and access to land and freshwater. However, the industry is still underdeveloped with comparable areas across the nation and world.

Opportunity exists to cater to increased domestic and global demand for protein and seafood produce. There is a large-scale prawn farmed proposed for the East Kimberley along with emerging enterprise in native species of freshwater lobster and prawns, and tropical rock oysters. Finalisation of the water allocation plans from the Fitzroy River Catchment System could enable increased scale in the West Kimberley.

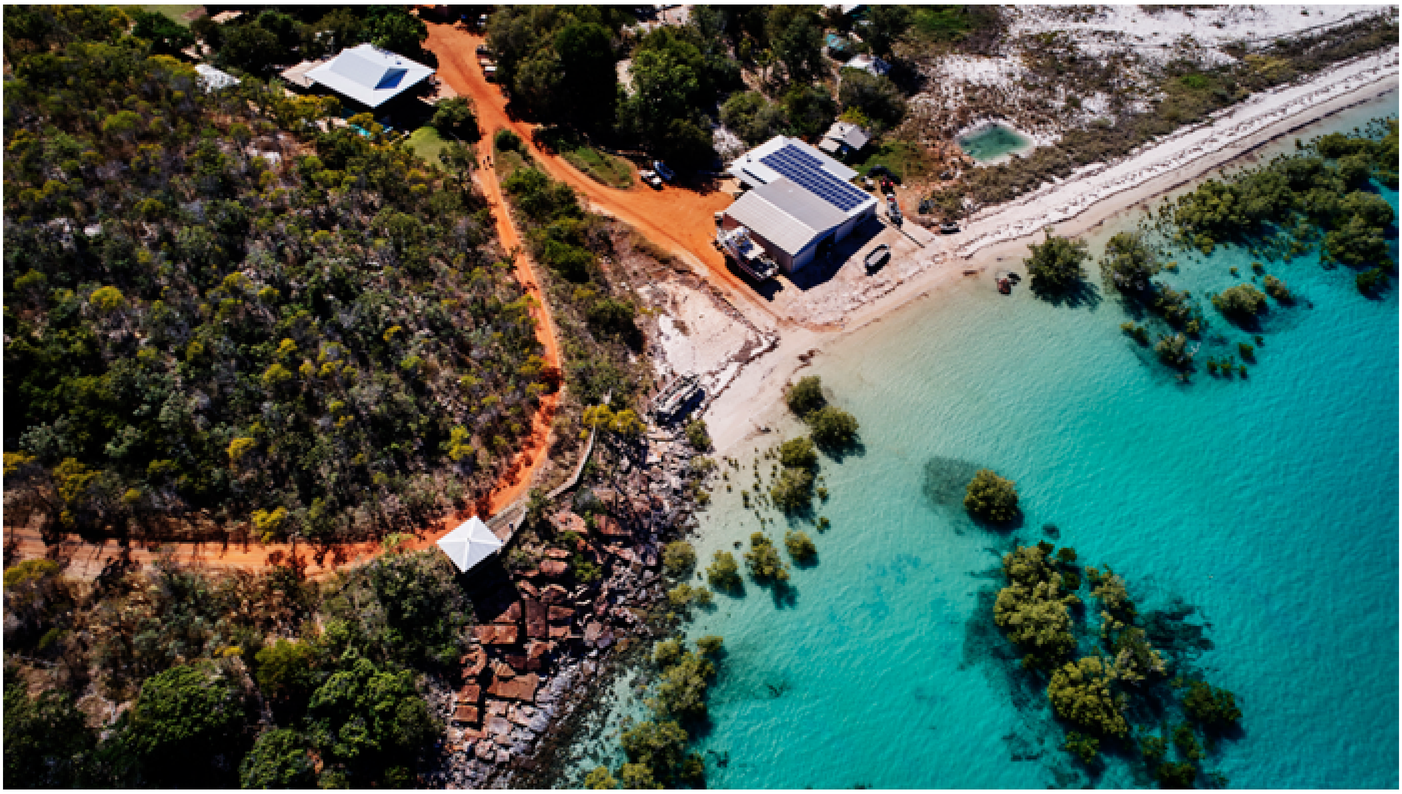
91% of Kimberley land and some sea areas have been determined under Native Title. This provides Indigenous groups with significant opportunity to engage and realise social and economic advancement. Potential also exists for aquaculture industry to integrate with other sectors of tourism and pastoral to expand business models and add value.

The formation of the Kimberley Aquaculture Development Zone (KADZ) with investment ready zones encourages development, extension to or creation of additional zones would encourage further growth. However, regulations and licencing are complicated and costly. Faster approvals, streamlined licensing, greater investment certainty, and smoother interactions with the Government are recommended.

Industry restraints include underdeveloped infrastructure, poor logistic pathways, and market access. Country of Origin labelling continues to present risk to the profile and profitability of the industry. Likewise, potential biosecurity breaches could severely impact industry, therefor ongoing collaborative research and development into biosecurity and best farming practises are vital to industry success.

RDAK Recommendation:

- Australian Government support the aquaculture industry by implanting the highest best practice biosecurity possible on imports to Australia.
- Ongoing support for whole of industry collaborative research and development.



[1] Kimberley Development Commission

The Snapshot

Aquaculture industry contributes $34.4M to the GRP

Relatively under-developed compared to other Australian regions

Natural advantages – clean water, climate & strong biosecurity

Global seafood demand offers significant opportunity

Main sectors pearling, farmed barramundi & emerging farmed prawns

Kimberley Aquaculture Development Zone creates investment ready zone

Country of Origin labelling presents risk

Research and development critical to industry growth

Industry Overview

The Kimberley aquaculture industry generates over a quarter of Western Australia's total aquaculture production. The sector contributes $34.460M GRP and currently creates approximately 75 jobs.[2]

However, the aquaculture industry in the Kimberley is relatively under-developed compared to other Australian regions. It has significant scope for growth in scale, value, and direct and indirect regional employment.

The Kimberley has one of the most biodiverse and least impacted marine ecosystems in the world. It has a natural advantage for increased aquaculture output through its pristine tropical waters and a macro tidal regime, accessibility of suitable land and fresh water, a warm stable climate, and a strategic location to growing markets in Asia and beyond.

However, while it has natural advantages, its current commercial capacity, which provides a competitive advantage for a thriving industry, needs to be developed through improving infrastructure. Resilient road and air freight, cool storage, hatcheries, and processing facilities are essential if the region is to realise its full potential[3].

Rapid global population growth and the rising middle-class demand for seafood, and the resultant declining commercial fish stocks, create a significant opportunity for industry growth. Aquaculture in the region is also well-positioned to produce world-class foods, nutritional and industrial compounds, boosts numbers of wild fish for recreational fishing, and restore threatened species.

The Kimberley's aquaculture industry is a made up of several segments dominated by pearling and farmed barramundi and soon to be farmed prawns. There are also micro or pilot project operations in edible rock oysters, sea cucumbers freshwater prawns, freshwater crayfish, trochus shell and mud crabs.

Most aquaculture activity is based in the West Kimberley, centered around the Dampier Peninsula and Buccaneer Archipelago, with smaller operations in Broome, Derby, and Kununurra in the east. There is real potential for a large-scale commercial prawn farm in the Northern Territory adjacent to Kununurra, known as Project Sea Dragon (PSD). PSD has major project status with the Australian, State, and Territory Governments. All approvals for the project are in place, and it is subject to final financial commitment to proceed.

Formation of the Kimberley Aquaculture Development Zone (KADZ) established a 2,000-hectare zone at the northern end of King Sound, about 55 nautical miles from Derby. The KADZ provides an 'investment ready' platform with strategic environmental approvals and management policies in place, allowing commercial aquaculture operations without the need for lengthy, complicated and expensive approval processes[4].

The state government and traditional owners are currently working on a development plan to see the sustainable and culturally appropriate use of surface and ground water from the extensive network of the Fitzroy River Catchment Area. The Fitzroy water allocation plan will cover an area spanning almost 94,000km2 extending from near Halls Creek in the east, downstream to the coast near Derby in the west. Increased access to reliable water supply would open significant opportunities in aquaculture industries and other industries of pastoral and irrigated horticulture in the region.

[2] Kimberley Development Commission – Aquaculture 2019
[3] CRCNA – Aquaculture Industry Situational Analysis (AISA) – Key Findings & Recommendations Summary
[4] See ref 2

Industry Segments

Pearling

The pearling industry dominates the aquaculture sector in the Kimberley. This long-established segment currently has a gross value production of approx. $53M[5] per annum and is the second most valuable fishing industry in Western Australia after rock lobster. Annual crop consists of pearls, pearl meat, and pearl shell.

The industry strongly supports the tourism sector, with visitors to the Kimberley seeking pearls and pearl jewellery, and it is a crucial part of Kimberley and Broome marketing platforms. A key element to the industry is the growth of hatchery-raised Pinctada Maxima oyster spat, which supplements wild catch. Mature oysters are seeded to encourage pearl growth and farmed in waters around Broome and Kuri Bay to produce world-acclaimed South Sea Pearls.

The industry suffered diminished demand and lower wholesale prices sparked by the Global Financial Crisis in 2007, followed by a further set back in 2014 when disease wiped out most hatchery stock. Industry revival has been hampered by the slow recovery of shell stock.

The Western Australian industry has been unable to secure a commitment for a wholly inclusive research program into biosecurity impacts to create a breeding program that creates robust stock.

Farmed Prawns

A proposal for a large-scale, integrated, land-based prawn aquaculture project based in the East Kimberley and Northern Territory known as Project Sea Dragon (PSD) is approaching critical development decisions and financial close. Work funded by Governments to sealed road access to support PSD commenced in 2019 and will be completed in 2020. PSD will be a staged project with the first stage employing an estimated 350 people in construction, and 120 people in operations. A processing plant has Development and Works Approvals to be built on Government land 15 km north of the Kununurra townsite. PSD is particularly essential to Kununurra, given the closure of the Argyle Diamond Mine in its district in 2020.

Once at full capacity, PSD is planned to be 10,000 hectares of prawn production ponds, supported by a series of geographically separate facilities across northern Australia. It would be one of the largest employers creating sustainable jobs and substantial economic development across several northern locations.

Farmed Barramundi

The finfish sector is fledgling with production of approximately 2,500 tonnes of barramundi per annum. The industry is currently operating under 30% of its 15,000T licence capacity with recently awarded approvals for additional 20,000 tonnes[6] of caged production in the zone. A second aquaculture licence was granted to grow 5,000 tonnes per annum. This additional capacity allows for much needed scaling to realise industry expansion.

STRENGTHS

- Strong profile of Australian produce
- High growth rates from warm water
- Large areas of suitable land
- Access and availabilty of freshwater

OPPORTUNITY

- Increased global demand
- Improve Indigenous engagement & employment
- Diversification of products
- Building scale
- Increased production and efficiency from R&D

BARRIERS

- Complex regulation
- High input costs
- Lack of skilled or experienced labour
- Clarity and regulation of Country of Origin labelling
- Ability to attract capital investment

RISKS

- Biosecurity breaches
- Complex regulatory processes
- International competitors
- Consumers unable to identify Australian produce

[5] State Fisheries Report 2018
[6] ATEA Consulting Kimberley Snapshot 2020

Industry Opportunity

Increased Global Demand

An extra billion consumers globally are expected by 2030, needing 25 million tonnes of seafood. With limited room for expansion in the commercial fishing sector (wild-catch), most of the additional supply will have to come from aquaculture[7]. Estimates show by 2030, nearly two-thirds of the world's food fish will come from aquaculture.[8] The Kimberley region is well-positioned to capitalise with its land and water resources and a strategic location to markets in Asia and beyond; providing trade and air access links are developed.

Domestically, Australian seafood demand has increased considerably over the last three decades, and demand currently exceeds domestic supply. As a result, 70% of seafood consumed is imported[9]. The Kimberley has the potential to significantly expand to meet this demand, thereby reducing the need for import substitution.

Product Diversification and Scale

Studies are underway to develop commercial quantities of tropical rock oysters across northern waters and develop hatchery and grow-out facilities in the West Kimberley. There is a considerable amount of work to be done, but if realised, it would create 500 new jobs, add $217M production value to the northern region over the next 20 years.

Opportunity to increase the current micro or trialled initiatives of Australian species of freshwater lobster and prawns to a commercially viable scale exists with proposals for enterprise in Broome and along the Dampier Peninsula being explored.

There is the market demand and potential to develop low cost, high volume, low trophic white fillet fish, along with emerging sectors of algae, coral, artemia, and seaweeds. There is also opportunity to produce nutritional and industrial compounds, wild fish for recreational fishing and ornamental fish, coral and live rock for aquariums.

Industry Integration

There is an opportunity for pastoralists to use inland saline and artesian waters to grow fish or other species to supplement their income, provided diversification permits are attainable. Increasing integration with tourism activities on aquaculture farms are proving successful and offer business model diversity[10].

The increasing scale of aquaculture brings with it opportunities for integration with agriculture in the region, particularly to grow crops used and ingredients to produce pellet feed for aquaculture ventures.

Indigenous Engagement

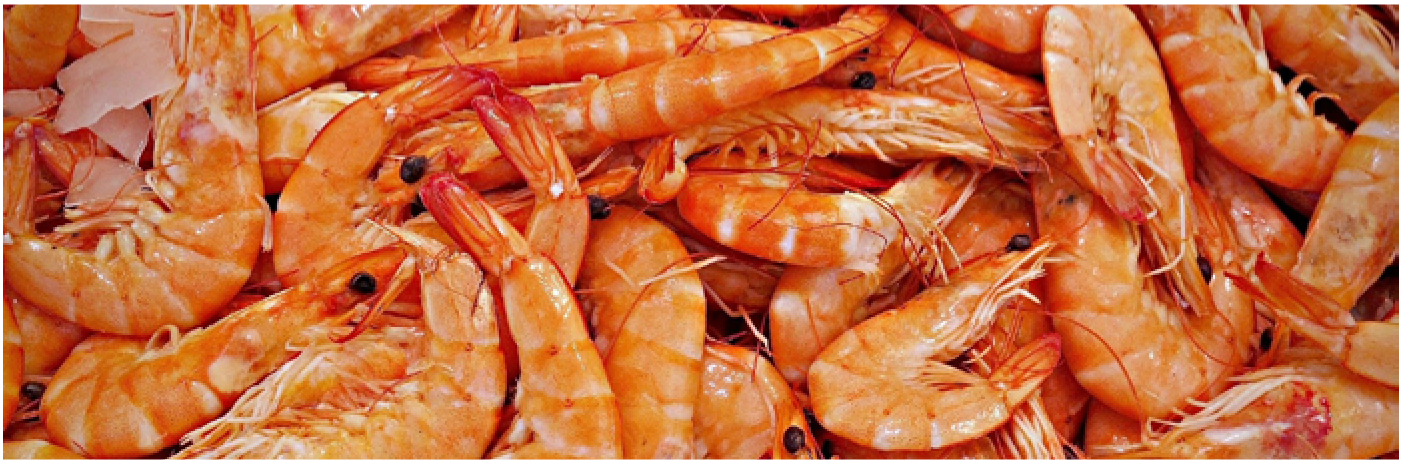
Many of the proposed and trialled aquatic projects based on the Dampier Peninsula are being led or jointly led by local Indigenous corporations who have been granted Native Title across much of the sea country in this sub-region. Increasing the scale and range of these projects will lead to better training and employment, which directly benefits economic and social outcomes for local Indigenous people.

Research & Development

Research and development are critical to industry advancement and to better understand the Blue Economy (the sustainable use of ocean and marine resources for economic growth, jobs, and improved livelihoods) and its impact on long term benefits for the Kimberley and its people. An opportunity exists for increased collaborative research into biosecurity, incorporating Indigenous knowledge and best practice farming techniques to advance industry.

Industry Cohesion

The aquaculture sector in the Kimberley has a self-recognised lack of cohesion. The development of a regional group (currently being developed - working title North West Aquaculture Alliance) offers opportunities for more focussed solutions and the engagement of Traditional Owners for better-realised development of the industry.



[7] Fisheries Research & Development Corporation Aquaculture
[8] Northwest Aquaculture Alliance
[9] Department of Agriculture, Water, and the Environment
[10] Department Primary Industries and Regional Development - Boosting aquaculture in WA

Industry Barriers

Input costs

Like other remote-based industries, aquaculture in the Kimberley has high input and supply chain costs – labour, power, water, feed, transport, parts and services that act as a barrier when production scale is limited.

Labour

A national shortage of skilled labour in the sector is reflected locally, however high unemployment rates in the region indicate there is a long-term opportunity to train and retain local Indigenous workforce for both skilled and unskilled jobs.

Capital

Access to capital is a barrier through a lack of historical industry success and perceptions regarding the ability to manage risks of disease and labour concerns[11]

Market Access

Despite several reviews, the ongoing lack of Country of Origin labelling for food sold for immediate consumption continues to frustrate the aquaculture industry. It does not address increasing competition from often ambiguous and misleading non-labelled imports or encourage market demand through customer recognised product differentiation.

Regulation

The aquaculture industry regulations and licencing are complicated and costly. Faster approvals, streamlined licensing, greater investment certainty, and smoother interactions with the Government will make starting or expanding an aquaculture business more straightforward and attractive.

Industry Risks

Biosecurity

Biosecurity breaches remain the most significant risk to the aquaculture industry. Ongoing research into suitable biosecurity measures to prevent emerging issues and reduce the impact of disease and economic loss is vital for industry security. Implementing domestication and breeding programs can afford emerging industries a substantial commercial advantage; by effectively protecting it from both exotic disease incursion and competition from lower-cost imported products[12].

Country of Origin

Pearling and barramundi producers face risk from competition from poorly labelled, non-traceable (pearls) yet readily available, low-cost overseas sources.

Report Recommendations

Recommendation One

Australian Government support the aquaculture industry by implanting the highest best practice biosecurity possible on imports to Australia.

Recommendation Two

Ongoing support for whole of industry collaborative research and development is provided in the aquaculture sector to ensure regional development outcomes flow and benefit the Kimberley region.

[11] – CRC NA Aquaculture Industry Situational Analysis (AISA) – Key Findings & Recommendations Summary
[12] CRCNA – Aquaculture Industry Situational Analysis (AISA) – Key Findings & Recommendations Summary

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