

Inquiry into Opportunities for Expanding the Aquaculture Industry in Northern Australia

Submission by the

DEPARTMENT OF PRIMARY INDUSTRY & FISHERIES on behalf of the Northern Territory Government

to the Joint Select Committee on Northern Australia

Purpose of the inquiry:

- The Joint Select Committee on Northern Australia has commenced an inquiry into opportunities for expanding the aquaculture industry in Northern Australia.
- The inquiry will examine opportunities for expanding the aquaculture industry in Northern Australia including:
 - the ability to commercialise new innovation;
 - develop new aquaculture projects and products; and
 - seek out new markets.

Introduction

Expansion of the NT's aquaculture industry is an important element in the development of northern Australia, as noted in the NT Government's February 2104 submission to the Joint Select Committee on Northern Australia's inquiry into developing northern Australia. In this submission, and in other representations to the Commonwealth Government, the deficit in transport infrastructure and other enabling infrastructure are identified as key inhibitors to economic development. This applies across all industry sectors and would apply to the aquaculture industry in particular given the anticipated wide geographical dispersal of aquaculture operations. A prime example of the importance of reliable, year-round access is to the proposed \$1.45 billion Project Sea Dragon which plans to produce 100 000 tonnes of prawns each year on isolated Legune Station. The NT Government has applied for Commonwealth assistance in building an all-weather road in this area which would also service the projected Ord Stage 3 agricultural development and possibly gas, mining and tourism enterprises. This would be a critical link in the Sea Dragon supply chain.

Any consideration of aquaculture developments must include the provision and maintenance of enabling economic and social infrastructure. Ideally any infrastructure servicing the aquaculture industry would have a common user element.

Background

Status of aquaculture in the Northern Territory

Over recent years the outlook for aquaculture in the Northern Territory (NT) has been challenging. Industry growth has slowed and many current operators have rationalised their levels of investment. A review of the Northern Territory aquaculture industry in 2014 found that the current industry was considered to be below a critical size for expansion and the prospects of future industrial scale aquaculture in the NT were uncertain, but still prospective. The decadal trend in Australia's terms of

trade were considered to have generally worked against new entrants to the aquaculture industry and directly impacted on the competitive position of those already invested.

Today, there is currently a small number of active licences in the NT. In 2012/13 the NT aquaculture industry was valued at approximately \$25 million; the pearling industry was \$14.81 and pond-based farmed barramundi was \$10.22 million. The value of the pearling industry is predicted to increase as one operator steadily expand production. The number of pond-based barramundi farms has reduced from four to one but the remaining farm has an agenda for continual expansion. It is now one of the largest barramundi producers in Australia.

Project Sea Dragon's proposal for the establishment of a mega-scale prawn farm in the Northern Territory/ Western Australia border region has the potential to change the face of aquaculture in the north significantly. If the proponent is able to successfully raise the capital and negotiate the approvals process, the development will cover a number of sites, both in remote regions and near Darwin and provide employment for several hundred people. It has the potential to be Australia's largest aquaculture venture.

Aquaculture industry status in other northern states

The long-term growth of tropical aquaculture industry has been significantly slower compared to most southern states. Queensland's aquaculture industry had a compound annual growth rate (in value terms) of around 4 per cent, while WA's was -3% and NT +2%. In comparison, Tasmanian aquaculture industry has had a compound annual growth rate of around 14 per cent in recent years.

The principal aquaculture output in northern Australia is pearls for the jewelry trade and farmed barramundi and prawn (mainly the black tiger *Penaeus monodon*) for Australian domestic consumption. Queensland produces prawns and barramundi (pond-based) and northern WA produces barramundi (sea-based cage culture) and pearls. In Queensland, recent industry growth is directly related to expansion within existing prawn and barramundi production areas. The key constraint limiting new aquaculture entrants in Queensland is the so-called "green tape" sensitivities from Commonwealth agencies in coastal areas between Cape York and Bundaberg adjacent to the Great Barrier Reef. Zones were recently established for extensive farming in Great Sandy Bay Marine Aquaculture Plan. In late 2014, the report from the Queensland Competition Authority on regulation of the Queensland aquaculture industry recommended the establishment of terrestrial aquaculture development areas to assist investors with identifying prospective aquaculture sites. They also recommended that marine development areas be restricted to the Torres Strait, Gulf of Carpentaria and other less populated areas with a low possibility of conflict with other users of marine resources. In WA, two aquaculture zones are being established; the Kimberley Aquaculture Development Zone in Cone Bay is the first zone to be established in WA. Another is planned in the mid-west, off the Abrolhos Islands.

Risks and challenges to driving aquaculture growth in the NT

As for many other development opportunities in northern Australian, the aquaculture industry faces significant economic, geographic, environmental and social challenges, including high transport and service delivery costs; harsh, extreme and often unpredictable weather; a sparse population; infrastructure challenges; and competition for skilled labour.

There continues to be significant challenges in the provision of sufficient transport and power infrastructure for regional NT, distant to major centres such as Darwin and Gove. The cost of doing commercial aquaculture production in the NT and northern Western Australia is higher than that of Queensland. This is not surprising given the extent of greater coastal development, higher worker/resident population and provision of better infrastructure and service support on the east coast of Queensland. Operating costs in the NT are believed to be moderately higher than in eastern

Queensland especially given the tyranny of distance and transport costs of feed, other inputs and product distribution to south-eastern Australian markets. Success of the mining/gas sector across northern Australia in the last decade has added substantially to poor labour availability, higher labour costs and other input costs to established aquaculture businesses. In addition, the growth of the aquaculture industry in the NT is limited by the number of suitable land and sea-based sites around growth areas (Darwin and Gove), the additional challenges to securing adequate land tenure arrangements on Indigenous lands, and, in the case of many aquacultured tropical species (such as barramundi and prawns), competition in the same market segment as frozen imports from Asia.

The NT Government's support for the aquaculture industry

Despite the challenges, the NT Government recognises the significant opportunities for future expansion of the aquaculture industry in the NT. While global production of wild catch seafood is not expected to increase, the demand for seafood continues to rise with the increase in world population and wealth. Aquaculture production is expected to help meet the increasing demand for seafood. Key advantages for large-scale aquaculture production in the NT include:

- Largely undeveloped coastline with minimal competition by other users, such as industries, urban coastal growth and recreational users of the coastline and seas.
- Pristine waters offering clean and green product branding.
- Proximity to Asia, with its rapidly growing wealthy middle class.
- Higher average seawater temperatures offering substantial production cost savings through significantly reduced production times.
- High-level support by the NT Government for commercial aquaculture investment in the NT, including the provision of supportive services and a dedicated aquaculture research facility.
- Broad support and engagement by Indigenous coastal communities for fisheries-based economic development and employment opportunities.

In tropical northern Australia prospective industries include those where high value species are targeted for niche markets or where mass production methods can achieve economies of scale in the production of lower value species. The proximity of northern Australia to the current hot spots of global economic and population growth in Asia and beyond offer aquaculture export opportunities, but these must be carefully marketed to be distinct and competitive alongside locally produced product in these areas.

Aquaculture development offers significant economic and employment opportunities for Indigenous people living in coastal northern Australia, particularly using low technology, sea-based approaches suitable for Indigenous cultural practices and lifestyles. Given 85% of the NT coastline (including the intertidal) is owned by Aboriginal people and 30% of the NT population is Indigenous, it is imperative that aquaculture development programs include a significant Indigenous fisheries sector. In addition, promoting and investing in Indigenous-owned fisheries businesses in the NT offers a unique and potentially powerful mechanism to drive fisheries (including aquaculture) development in remote areas of the Territory. It also offers the potential for a unique branding opportunity which would set Indigenous-owned businesses apart in the market place. The NT Government's Department of Primary Industry & Fisheries (DPIF) has been highly innovative in setting up foundational programs to establish remote Indigenous-owned fishing and aquaculture businesses across the NT.

Currently, the Aquaculture Unit of the Fisheries Division conducts industry-led R&D and offers business support services through a dedicated research facility – the Darwin Aquaculture Centre. The Aquaculture Unit also offers support to investors through case management of aquaculture proposals and assisting proponents to obtain the necessary approvals from other departments. It also has a substantial R&D program to support Indigenous communities develop culturally and socially suitable sea farming ventures and businesses that deliver both economic and social benefits.

The work of the Aquaculture Unit contributes to the broader aims of the DPIF to increase the value of food production in the Northern Territory. The Department aims to grow the primary industry and fisheries (including aquaculture) sectors by:

- reducing red tape,
- assisting to increase exports to Asian neighbours,
- enabling increased flexibility for land use on pastoral leases, and
- improving the availability of land and sea for primary production.

The Department also seeks to encourage Indigenous involvement at all levels of primary production to ensure that the impacts of increased industry growth, including jobs, benefit all Territorians.

Emerging large-scale aquaculture opportunities in the NT

There are three significant prospective large-scale aquaculture investment opportunities in the NT – sea cucumber ranching and stock enhancement, large-scale pond-based prawn farming and large-scale sea and land-based finfish culture. Currently there is commercial investment interest in sea cucumber and prawn farming in the NT and the Territory's remaining pond-based barramundi farm is on a program of significant expansion.

i. Sea cucumber ranching and stock enhancement

The work completed to date through a joint commercial/NT Government R&D program on sea cucumbers points to a substantial sea ranching and stock enhancement opportunity. Since 2005 a private company has invested significant R&D into production techniques for large-scale sea cucumber ranching and stock enhancement. This work has been actively supported by the NT Government. This company owns all six wild sea cucumber licences across the NT and is working with Indigenous communities to establish remote ranching and processing operations. The company's long-term vision is to significantly enhance wild stock yields in fishery grounds and remove some of the harvest variability usually associated with the wildstock fishery.

ii. Large-scale pond-based prawn farming

The second opportunity relates to new large-scale prawn investment interest not seen before in the Australian context. Over the past few years a significant investor (Seafarms Group) has proposed to develop up to 10,000 ha of grow-out ponds across northern Australia suitable for the production of black tiger prawns and other tropical aquaculture species. A land use agreement between Seafarms and Legune Station near the NT /Western Australian border has recently been announced. The company is currently about to embark of its final stage of project planning (Detailed/Bankable Feasibility) which will principally involve the detailed engineering; environmental and planning approvals; and financial structuring.

iii. Large-scale, sea-based finfish cage culture

Between 2000-2004 a sea cage barramundi initiative was successfully operating in the waters of the Tiwi Islands. The NT Government provided R&D support and commercially supplied fingerlings produced by the Darwin Aquaculture Centre. The company was planning expansion into sites around the Darwin region when it was bought out and the operation closed down. Although the economic viability of the operation appeared sound, no further investment in finfish cage culture has occurred in the NT. The Government remains supportive of sea cage development in suitable areas.

The ability to commercialise new innovation

The ability to commercialise new aquaculture innovations in the NT relies on:

- Significant commercial investment in the emerging large-scale aquaculture opportunities identified.
- Significant and long-term (decadal) investment in the foundational Indigenous fisheries business and employment programs established by NT Fisheries.

DPIF recommends the following key actions to realise the aquaculture potential of the NT:

- Focus on large-scale aquaculture investment attraction.
- Identify suitable land and sea areas for aquaculture development.
- Include aquaculture infrastructure needs in NT/federal governmental infrastructure development programs.
- Identify priorities for research and innovation into large-scale production systems, driven by industry/government partnerships.
- Significantly expand and provide ongoing decadal support for Indigenous fisheries and aquaculture business development and employment programs.

Develop new aquaculture projects and products

Aquaculture zones around the Darwin and Nhulunbuy regions

DPIF has long recognised that planning for both land-based and marine aquaculture is a key factor supporting the future long-term sustainable development of the aquaculture industry. Both Queensland and WA have both undertaken aquaculture planning to identify sites suitable for aquaculture development. Up-front identification of sites would address many of the critical issues past applicants have faced throughout the assessment process and provide greater certainty for investors establishing new aquaculture developments.

DPIF proposes that land and sea-based regions around the growth centres of Darwin and Nhulunbuy are targeted as the first phase of planning for significant aquaculture development in the NT. It is proposed that an inventory of available resources in these regions is developed to support various aquaculture industries. This would ideally lead to zone identification in the longer term.

Indigenous aquaculture businesses driving commercial investment in remote regions

The Indigenous aquaculture programs implemented by DPIF have established small foundational fisheries and aquaculture programs that, potentially, could provide the catalyst for rolling out numerous commercial Indigenous fisheries ventures across remote northern Australia. To date these programs have been supported by cyclic, short-term investment by the NT Government and project-based investment by external funding agencies. Despite the ad hoc nature of this investment reasonable success has been achieved in negotiating the various pre-commercialisation phases of Indigenous small fisheries business development. Current programs have facilitated engagement between Indigenous communities and other stakeholders, including the commercial fisheries sector, that will lead, over time, to demand-driven development rather than government-supported programs. However, for these fisheries initiatives to develop into viable, self-sustaining Indigenous businesses, it is essential that they secure long-term financial support and high-level leadership to support a larger, structurally integrated, regionally based partnership model. Such a model would ensure that communities, industry and government co-ordinate capacity building services for Indigenous leadership, governance, business management and industry skills. This model should rely on demand-driven financial support at the regional level where local development drives the rate and level of

investment. This investment is finite and discontinues once businesses become commercially viable and/or they attract private investment. DPIF proposes the following key recommendations for establishing such a partnership model:

- Develop structurally-integrated regionally-supported, Indigenous fisheries development programs
- Link financial backing with investment demand driven by development at the regional level
- Continue to broaden current training programs to include business planning and management capacity development, linked with industry mentoring and networking programs
- Ensuring community/regional leadership and governance is in place to support fisheries businesses
- Develop Indigenous capacity for fisheries work participation through further social research into engagement strategies

As a phased approach to this vision, DPIF is currently seeking investment into the development of Indigenous micro fisheries to provide seafood into local markets thus improving local food security and nutrition, employment and business capacity development.

Seek out new markets

DPIF actively seeks Expressions of Interest for new aquacultured products and markets globally. To achieve this avenues and platforms are currently being explored to drive investment, develop partnerships and attract major investments. The following are some of the new products and markets currently being investigated.

Ornamental aquarium species markets

In addition to the large-scale aquaculture investment opportunities discussed above, considerable opportunity exists for new, niche market products to be farmed in tropical northern Australia. The coral reef habitat of northern Australian waters is largely unexplored and underexploited and, as such, offers unique, new, high-value species for the ornamental aquarium trade. Australia has rigorous measures in place to ensure the aquarium fishery is managed using environmental sustainable principles. Nevertheless, recent environmental concerns for coral reef protection suggest expansion of the existing NT aquarium fishery is unlikely. As such, the sector believes there is little scope to grow their industry through wild caught product and is keen to explore opportunities to farm ornamental species. At present the Aquaculture Unit is establishing an R&D partnership with industry to assess production methods and national and international market potential for a range of potentially high-value ornamental marine species.

Indigenous produced and branded seafood markets

The aquacultured species targeted for Indigenous businesses currently include the sea cucumbers (*Holothuria scabra*), the blacklip tropical rock oyster (*Striostrea mytiloides*) and the fluted giant clam (*Tridacna squamosa*).

Markets for sea cucumbers have been long established by the industry partner through its existing sales of wild caught sea cucumber product into Asia. It is anticipated that farmed product will enter the market via these well-established supply chains.

Markets for the blacklip tropical rock oyster and the fluted giant clam are currently under investigation through various market analysis and product specification activities. Darwin restaurateurs and seafood retailers are particularly keen to explore, with Indigenous communities, branding opportunities for Indigenous produced seafood and the potential to offer international tourists an exclusive, Indigenous

produced, uniquely Australian, seafood cuisine experience. Broader analysis of the potential for placement of the blacklip tropical rock oyster into national seafood markets is planned.

The Aquaculture Unit is also assessing the international aquarium market and seafood market for mature fluted giant clams (3 years +) to gauge the economic feasibility of clam ranching in Indigenous coastal communities.

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