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28 February 2018

**ANNOUNCEMENT 554** 

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**Dear Sir** 

#### **Seafarms Group Limited Half Year 2016 Presentation**

Enclosed is Seafarms Group's Half Year 2017 Presentation.

Please telephone Harley Whitcombe on (08) 9321 4111 with any queries on the Presentation.

Yours faithfully

**Seafarms Group Limited** 

Harley Whitcombe Company Secretary

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### Operational Overview for the 6 months ending 31 December 2017 & Market Update – Project Sea Dragon February 2018

Transformation of Australia's largest aquaculture shrimp producer into a global player

**Seafarms Group Limited** 

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### **Seafarms Group Limited Overview**

- Overview of Seafarms Group
- Financial Outcome 1HFY18
- Operations Overview and Outlook
- PSD Overview
- PSD Investment Opportunity
- PSD Design
- CO2 Australia





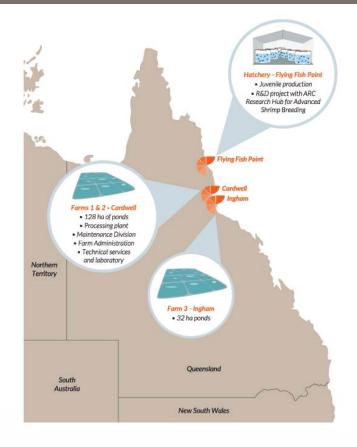
### **Overview of Seafarms Group**

### **Overview of Seafarms Group Operations**

Seafarms Group Limited (SFG) is Australia's largest producer of farmed prawns, underlining its operational aquaculture expertise.

- SFG is an ASX listed Australian agri-food company, with a current market capitalisation of c. A\$87 million
- Seafarms is rapidly advancing its world class Project Sea Dragon (PSD) project:
  - A large scale, integrated, land-based shrimp/prawn aquaculture project in Northern Australia
  - At full production, PSD will become the only producer from a developed country offering a significant volume of superior shrimp product
  - Annual estimated revenues in excess of US\$2.3b
  - SFG is Australia's largest producer of farmed prawns under the well known Crystal Bay brand (producing Banana and Black Tiger Prawns). It produces +1,700 tonnes p.a. in Queensland (Cardwell), equal to circa 37% of the Australian prawn aquaculture market
- The Queensland operations are a fully vertically integrated facility and have provided the company with a platform to develop and test best practices for the planned industrial scale PSD operation.
- CO2 Australia carbon and environmental services company continues to provide cashflow to SFG

#### **Queensland Aquaculture Operations**





### **Overview of Seafarms Group Team**

Highly experienced management team across project development and management, aquaculture operations, finance and business development.

#### **Key SFG Management Team Members**

#### Ian Trahar

**Executive Chairman** 

- Extensive experience in the resource and financial services across multiple industries and organisations
- Previous roles include joint CEO of Avatar Industries, Chairman of Ranger Minerals along with executive roles at Shell Australia and Citibank

#### Dr. Chris Mitchell

Managing Director - PSD

- 20+ years experience in Australian and international climate change research holding both senior and executive roles
- Foundation Director of the Centre for Australian Weather and Climate Research

#### Ian Leijer

Commercial Director

- Chartered Accountant with 20+ years experience in corporate finance, strategy and business management
- Previously CFO of former ASX listed Company Avatar Industries Ltd and interim CEO of ASX listed Kresta

#### **Dallas Donovan**

**Chief Operating Officer** 

- 20+ years aquaculture experience including technical and production management, harvesting, processing and marketing
- 6 years managing the National Prawn Company in Saudi Arabia - one of the world's largest fully integrated aquaculture operations

#### Jairo Llanos

Technical / Production Manager

- 35+ years of experience in Saudi Arabia and South America
- Direct experience managing commercial shrimps operations, including extensive experience in large scale prawn/shrimp aquaculture including hatchery, breeding programs and grow out.

#### Rod Dyer

Chief Projects Officer

- 35+ years of experience in the leadership and delivery of a wide range of Projects and Project Programmes over a diverse range of Industry.
- Previous roles include Executive General Manager Projects for Macarthur Coal, Chief Projects Officer for Peabody Energy, VP Projects for BMA as well as project delivery roles for various food companies.



#### **Achievements Since November 2017 AGM**

#### January-February 2018

- Development and subdivision approval for hatchery site near Darwin at Gunn Point
- Satisfies terms for land lease with conversion to freehold with NT Government.
- ▼ Implementation of ILUA commenced with formal meetings with Native Title Holders
- The Company has negotiated a 3 month extension to the Legune option
- Northern Territory Government Infrastructure Update for February up to April 2018 highlights the level of infrastructure support for Project Sea Dragon
  - ≤ \$15m Bynoe Harbour Access Road Point Ceylon with anticipated construction commencing Dry Season 2018. Project Sea Dragon breeding and broodstock centre will benefit from this infrastructure upgrade.
  - ≤ \$57.4m Keep River Road Upgrade with anticipated construction commencing July 2018. Project Sea Dragon's production centre at Legune Station will benefit from this infrastructure upgrade.
  - ▲ \$40m Gunn Point Road Upgrade government has opened tenders for the upgrade and construction. Project Sea Dragon hatchery will benefit from this upgrade.

#### December 2017

- Granted Aquaculture Licence by NT Government for Seafarms Core Breeding Centre and Broodstock Maturation Centre at Bynoe Harbour, near Darwin.
  - ✓ This centre is a key part of Project Sea Dragon with the centre undertaking the selection and development of high-performing broodstock for the hatchery, before the stock is moved to production ponds at Legune.



# Other Major Achievements over reporting period (up to 31 December 2017)

#### Other

- ► Landmark Indigenous Land Use Agreement (ILUA) was agreed and signed between all Parties for the entire 10,000 hectare PSD project.
- Execution of Project Development Agreement with NT Government for the entire 10,000 hectare PSD project.
- Major environmental and planning approvals for PSD obtained both from the Commonwealth and NT Governments.
- Finalisation of Vendor Due Diligence Program confirms the robustness of Feasibility Study.
- Domestication and breeding programs already delivering significant operational outcomes. Second generation of prawns established.
- Carbon business continues to be cash flow positive with new business opportunities identified particularly new major long term Government land management and revegetation programs.





# Seafarms Financial Overview 1HFY18

## SFG Financial Outcome for the 6 months ending 31 December 2017

- For the 6 months reporting period to 31 December 2017, Seafarms has reported a loss in the order of \$9.94 million (prior comparative period loss of \$10.86m), reflecting the positive cash contributions of domestic shrimp and carbon operations whilst fully expensing all PSD development costs, as required by the Australian Accounting Standards.
- The key drivers of this outcome were heavily influenced by:
  - As previously reported due to unseasonal low temperature and heavy rainfall event coupled with the use of wild black tiger broodstock from Queensland led to an emergence of the YH7 endemic virus at our Cardwell operations (Farm 1 and 2). This combination of events led to poor health in animals and reduced growth rates and survival. This resulted in shrimp revenues being \$11.1m below forecast. Despite this, Seafarms remains confident that its overall tonnage target for the FY18 of circa 1,700 tonnes (FY17 1,703 tonnes).
  - A further \$3.8m of expensed investment in developing PSD which now represents approximately a \$47m investment to date in this world class project.
- Successfully raised \$2.2 million. The majority of the capital raising is in the form of a debt to equity swap with a company associated with Seafarms' Chairman Ian Trahar to assist in the development of Project Sea Dragon.
- New banking facility secured with HSBC primarily in the form of working capital facilities for Seafarms Queensland operations.



### **Seafarms Group Limited Corporate Overview**

ASX Listing Code	SFG
Market capitalisation (19 February 2018)	\$87m
Shares on Issue	1,403m
Cash, Debtors & Inventories (31 December 2017)	\$12.6m
Long Term Debt (31 December 2017)	\$5.5m
Financial Year End	30 June
Directors Shareholdings	36.1%
Directors	Ian Trahar (Executive Chairman) Harley Whitcombe Chris Mitchell Paul Favretto
Company Secretary	Harley Whitcombe





### **Operational Overview**

### **Current Operations**

- Hatchery (A)
  - Innisfail
    - Domestication program
    - R&D Project with ARC Research Hub for Advanced shrimp

      Breeding
- **Farms** 
  - Cardwell (B)
    - Farms 1 and 2
    - ▲ 128 ha of ponds
    - Processing plant
    - Maintenance division
    - ▲ Farm administration
  - ▼ Ingham (c)
    - Farm 3
    - ▲ 32 ha of ponds
- Founder Stock Centre
  - Exmouth (D)
    - Biosecure broodstock breeding facility











#### Production Outcomes and Outlook – 1HFY18

- Production 749 tonnes down 34.5%.
- Majority driven at Cardwell (Farm 1 and 2) black tiger operation which was affected by YH7 endemic virus as a direct result of the use of wild Queensland broodstock and unseasonal weather events.
- YH7 is not an exotic virus, it is naturally present in Queensland waters and there are no adverse impacts on human consumption.
- Banana prawn production was in line with forecast.
- Restocking of Farms 1 and 2 is now underway all broodstock and post larvae have tested negative for YH7.
- Ingham operation wasn't affected by YH7 endemic virus as stocked with wild Northern Territory black tiger broodstock and is located some 50km by road from the Cardwell operations. Initial harvesting results are in line with expectations.
- Production forecast for FY18 remains at circa 1,700 tonnes.
- There are currently 5 high health families at the Exmouth facilities which have tested negative for selected pathogens. These families continue to be developed to support PSD's requirements for SPF broodstock and for SPF animals to be stocked into the BMC in 2019.
- It should be noted, Project Sea Dragon's quarantine, screening, domestication, selection and breeding program will lead to only domesticated (not wild broodstock) Specific Pathogen Free (SPF) animals in production ponds. The families produced at our Exmouth Facility for our PSD project are SPF. This includes being free of the YH7 virus. The use of SPF broodstock is universally recognised as one of the leading ways to maintain disease free operating environments.



### Marketing activities driving growth

- New brand tag line "Taste the Deliciousness" captures the brand essence best tasting and highest quality.
- Video content centred on "Simple & Delicious Prawn Recipes" Recipe" videos have promoted ease of use and consumption.
- Consistent social media strategy has led to growth of social media followers and driven brand engagement.
- Export orders and international brand advertising developed.











### **PSD – Overview**

At full production, PSD will produce up to 150,000 tonnes per annum of black tiger shrimp, in 10,000 hectares of production ponds.

Full production to be achieved over several incremental stages.

### **PSD** is Implementation Ready

SFG has proven operational experience, strong leadership team and regulatory approvals and support required to commence PSD implementation

Operational Experience

- SFG acquired the existing Queensland (QLD) aquaculture operations in January 2014
- ₹ SFG has since then developed operational expertise and best practice techniques over ~ 4 years
- QLD operations achieved production of over 1,700 tonnes approximately 37% of total Australian prawn aquaculture production

**Management** 

- SFG has assembled a highly experienced and skilled management team in prawn aquaculture, at a scale far in excess of the QLD operations and equal to the first stages of PSD
- Senior executives and operational management have significant experience in building and operating global scale vertically integrated aquaculture projects
- Management team has over 200 years of combined aquaculture experience

Feasibility Study and Project Development

- SFG has completed feasibility studies
- Finalised both the Indigenous Land Use Agreement (ILUA) and NT Project Development Agreement
- Key environmental approvals / licences for Stage 1 have been received
- Land access and option agreements have been signed

**Government** Relationships

- PSD has received the support of Territory, State and Federal Governments
- Concessional loans to support the project are under discussion with the Northern Australia Infrastructure Facility ("NAIF")
- Combination of Northern Territory, Western Australian and Commonwealth Governments have committed to funding road upgrades to support PSD, as well as other providing other significant support.



### Financing/JV discussions

- Program of vendor due diligence.
  - Project Sea Dragon commissioned a series of reviewers to undertake detailed due diligence on the feasibility study:
    - Engineering Breeding Program Facilities (Aurecon)
    - Engineering Grow-out (GHD)
    - Production System and Processing (Poseidon)
    - Market (Poseidon)
    - Stage 1 Environmental (ERM)
    - ▲ HR (Change 2020)
    - ▲ Legal Land tenure and licences (Corrs Chambers Westgarth)
    - ▲ Insurances (Marsh)
- The Vendor due diligence process highlighted the robustness of the Feasibility Study.
- Discussions with potential joint venture partners, bankers, investors and off-takers gathering significant momentum now that new licences to construct and operate PSD have been issued.



### Financing/JV discussions

SFG has been working with an experienced team of advisors

#### **Key Advisors**

- Lazard Global financial advisory firm
- Corrs Australian law firm
- ₹ PwC Global accounting and tax firm

#### **Technical and Engineering**

- Aurecon
- ₹ GHD
- Wylie
- Watertech
- Golders
- Jebsens





## PSD – The Investment Opportunity

### **Key Investment Highlights**

#### PSD is a unique investment opportunity

Highlight	Comment
BTP is a Premium Product to Tap into Strong Seafood Demand	<ul> <li>Global seafood demand is expected to exceed supply by &gt;50Mt in 2030, driven by growth in middle class population</li> <li>PSD was conceived under secular trend of increased demand in protein and will produce up to 150,000 tonnes of prawns per year from 10,000 Ha of production ponds at full production, making it the world's largest producer of BTPs</li> <li>BTPs attract a price premium over the most commonly traded White Prawn (WP)</li> <li>Larger BTPs, the focus of PSD, attract an additional pricing premium</li> <li>Strong marketability for "Made in Australia" BTPs as Australia is known for supplying quality and trusted food products</li> </ul>
Strong Operational Track Record	<ul> <li>SFG has been operating existing QLD aquaculture operations since January 2014 and has been a major and reliable source of supply of BTPs in Australia</li> <li>SFG has developed operational expertise and best practice techniques in BTP farming         <ul> <li>Demonstrated a 13% yield improvement for BTPs over CY2016 at its QLD operations using in-house operational and breeding techniques</li> <li>SFG is the commercial partner for James Cook University's Advanced Breeding and Genetics prawn research program focused on identifying genetic advances to improve size, yield and efficiency</li> </ul> </li> <li>Trial export shipments from QLD operations have demonstrated strong demand for SFG product</li> </ul>
Significant Barrier to Entry	<ul> <li>Only a handful of sites around the world have the tropics suitable for BTP farming; furthermore, the combination of remoteness for improved biosecurity and proximity to the Asian markets of proposed PSD sites cannot be easily replicated         PSD is the only major aquaculture project with major project status in Australia         BTP aquaculture requires more advanced breeding and domestication techniques, representing barriers to entry and enhancing BTPs' relative scarcity as a higher quality product     </li> <li>PSD is vertically integrated enabling PSD to maximise biosecurity, product consistency and to implement genetic research advances</li> </ul>



### Key Investment Highlights (cont'd)

#### PSD is a unique investment opportunity

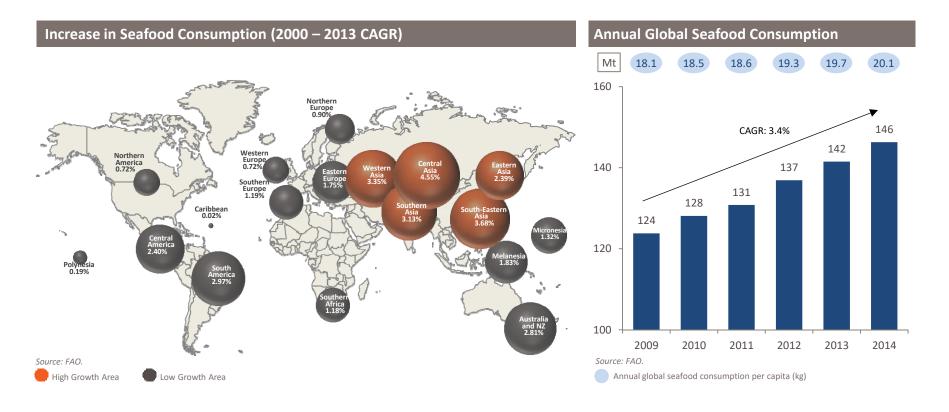
Highlight	Comment
Industry-leading Biosecurity Control	<ul> <li>SFG has developed stringent biosecurity protocols and standards at its QLD operations, with best practice and key learnings to be applied to PSD</li> <li>Biosecurity has been designed into both physical structure and operating procedures for the project         <ul> <li>Separate locations for breeding, grow out and processing activities to mitigate disease risk</li> </ul> </li> <li>PSD self-selects healthy and Specific Pathogen Free (SPF) broodstock, eliminating pathogen entry pathway through broodstock</li> <li>Specific project design elements (e.g., buffer zones, water treatment, access protocols) lead to improved biosecurity</li> <li>Established emergency action protocol that "ring fences" any disease outbreak</li> <li>Farms can be restarted quickly after any disease event with SPF stock, further ensuring that losses are minimized</li> </ul>
Supportive Regulatory Environment	<ul> <li>China-Australia Free Trade Agreement enacted by both governments in June 2015         <ul> <li>Elimination of Chinese tariffs on Australian prawns within 4 years to further improve PSD's relative cost position</li> </ul> </li> <li>PSD was awarded Major Project Status by the Northern Territory Government, Western Australia Government and the Federal Government</li> <li>Signed Indigenous Land Use Agreement (ILUA), the last step in securing the support of the traditional owners, and NT Project Development Agreement (PDA), providing the pathway for development for all 7 stages</li> <li>Received key environmental approvals and licences for Stage 1</li> <li>Government support package includes upgrading access roads to all facilities</li> </ul>
Material Upside from Subsequent Stages	<ul> <li>Stage 1 will include significant headwork infrastructure for subsequent stages</li> <li>Limited incremental capital expenditure required for each subsequent stage aside from earthworks</li> <li>Low fixed operating cost base, with majority of operating costs scalable to production volumes</li> <li>QLD operations require 1 FTE for every 18 tonnes of prawns harvested, whilst PSD will target 1 FTE for every 88 tonnes at full production</li> </ul>



### **Global Seafood Market**

The global consumption of seafood has grown at a CAGR of 3.4% between 2009-2014, driven by rising populations but also rising per capita consumption

Consumption growth has been particularly high in Asia





### Global Seafood Market (cont'd)

SFG seeks to tap into the accelerated demand for protein from a growing Asian middle class. A significant proportion of this new demand can only be met by seafood aquaculture

Key macroeconomic trends

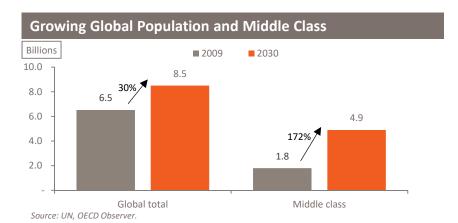
- 1 Global population expected to grow to 8.5 billion by 2030
- 2 Levels of urbanisation forecast to increase from 54% in 2015 to 60% by 2030
- Global "middle class" forecast to increase from 1.8 billion in 2009 to 4.9 billion by 2030
- 4 Key source of growth is Asia, where seafood is culturally preferred over red meat

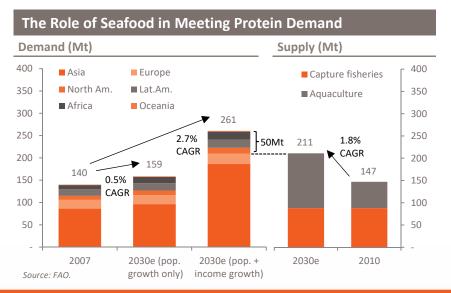


- Annual consumption of protein per capita to increase by 10%, from 41kg to 45kg by 2030
- Global seafood demand will increase by c. 86% from c. 140Mt in 2007 to c. 261Mt in 2030
  - Major part of daily Asian diet
- Forecast aquaculture supply growth is not sufficient to meet forecast demand growth
  - Current baseline supply growth projections to 2030 leave a shortfall of 50Mt

Source: UN, FAO, OECD Observer.



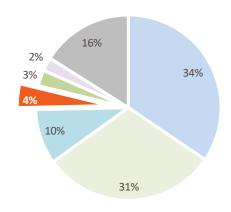




### Role of Prawns in Global Seafood Demand

Prawns represent one of the world's most traded seafood products by value and is expected to be an important part of meeting the growing global seafood demand

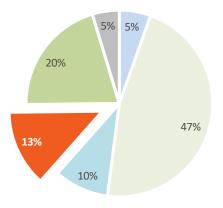
#### 2015 Seafood Production by Major Species



Total Global Production Volume: 199.7 Mt

- Marine Fish
- Freshwater and Diadromous Fish
- Molluscs (excl. Cephalopods)
- Prawns
- Crustaceans (excl. Prawns)
- Cephalopods

2015 Seafood Traded Value by Major Species



Total Global Aquaculture Traded Value: US\$187.9bn

- Marine Fish
- Freshwater and Diadromous Fish
- Molluscs (excl. Cephalopods)
- Prawns
- Crustaceans (excl. Prawns)
- Cephalopods

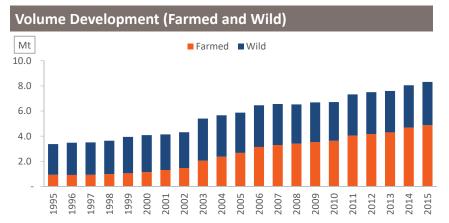
Source: FAO FishStat; Global capture and aquaculture production.

Source: FAO FishStat; Global aquaculture value.

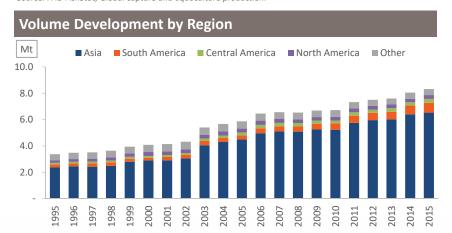


### **Global Prawn Industry Structure**

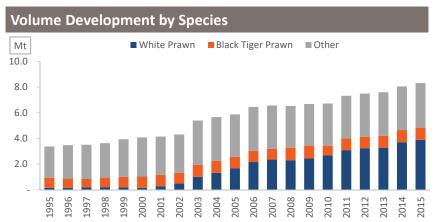
The global prawn industry has seen significant growth since 2000, driven by WP production in Asia. WP production has increased as a result of successful domestication programs leading to improved growth rates



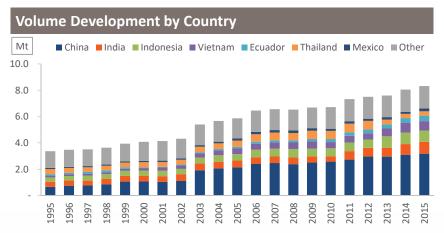
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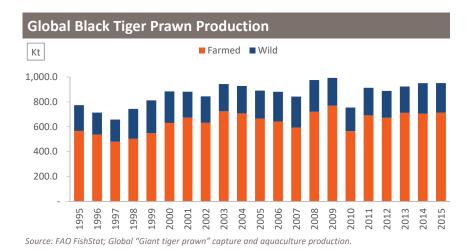


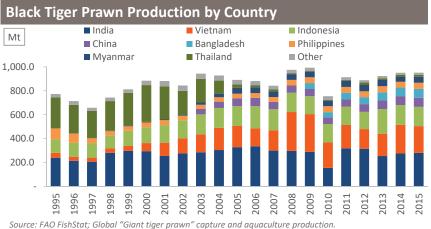
Source: FAO FishStat; Global capture and aquaculture production.



### **Black Tiger Prawn Market**

Despite being a premium product, global volumes of BTP have remained in a 600-800 Kt range since 2000





- Until the beginning of this millennium, BTP was the main species for prawn aquaculture due to its strong natural growth rates and premium pricing. However since 2000, producers have been shifting away from BTP to WP as WP has proved easier to domesticate and capture better biological performance
  - In addition, an outbreak of white spot disease in Thailand led to the introduction of a government ban on BTP farming in inland areas
- More recently, BTP selective breeding programs have resolved a number of these historical issues with BTP farming, leading to some recent increases in BTP production
- The increasing concentration of WP production as the dominant farmed species has led to biological challenges, including most recently Acute Hepatopancreatic Necrosis Disease (AHPND)

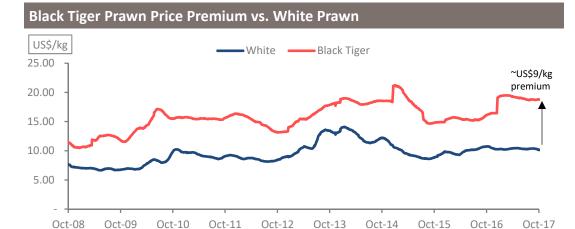


### Benefits of Black Tiger Prawn Strategy

The more advanced breeding techniques, larger optimal size and premium prices make BTP the ideal species for the Australian aquaculture industry

#### Benefits of Black Tiger Prawn Production

- 1 Greater barriers to entry as a result of greater required competences in breeding and domestication techniques
- 2 Capture Australian led genetic improvements
- 3 Premium product pricing compared to WP



Note: Data as at 23 Oct 2017; indices on a Headless, Shell-On (HLSO) basis; Converted to USD/kg. Source: Urner Barry.

- The Urner Barry shrimp indices are based on the previous week's prices achieved across a select group of US based seafood traders
  - As such, it represents only a guide to global prices for open market traded products on a spot basis
- Majority of prawns are traded on a bilateral basis with premiums for security of supply, quality of product and size
- SFG currently captures a significant premium on the price achieved for BTP at its QLD operations compared to the Urner Barry
  - PSD will size its product to maximise price premium



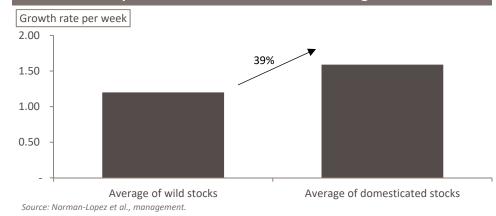
### **Black Tiger Prawns - Genetic Breeding**

Much of the recent success in domestication and genetic breeding programs for BTP have been led by Australian researchers, working in conjunction with SFG

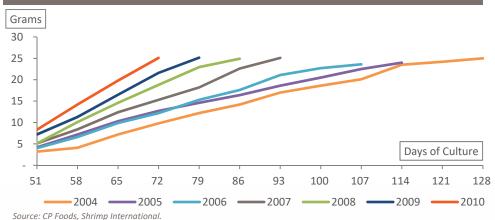
#### Commentary

- BTP breeding programs have improved the biological performance of this species for use in aquaculture
  - Improved growth rates
  - Recent discovery of genetic markers to white spot disease resistance
- Most estimates of growth rate gains in aquatic species are 10–20% per generation of selection
- The historical performance increases that have been obtained in WP since 2004 illustrate the further benefits that are available to BTP as a domesticated species

#### **Growth Rate Improvement in Domesticated Black Tiger Prawns**



#### **Long Term Growth Rate Improvement in White Prawns**





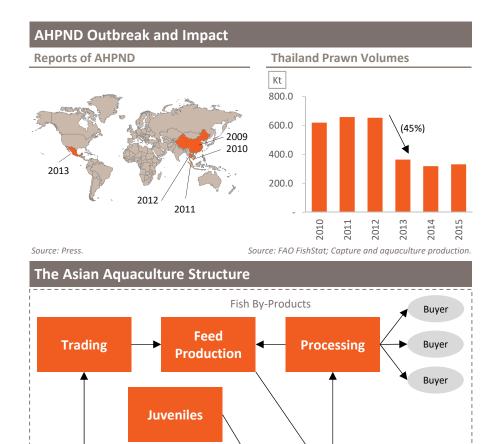
### Biosecurity Is the Key Industry Risk Factor

Disease has a severe impact on aquaculture production, given the intensive nature of the industry, and will spread fast once established in a region

Feed and Other

Commodities

- As with other animal production systems prawn aquaculture is exposed to disease risk, such as:
  - AHPND, which resulted in 20–60% reductions in harvest volumes in impacted countries
  - Thailand experienced a 45% decline in prawn volumes following an outbreak of AHPND in 2012
  - More recently, EHP has caused ongoing production losses throughout Asia
  - White spot syndrome, although many countries have now learnt how to control this disease
- Countries with the highest disease challenges are characterised by
  - 1 Poor husbandry practices and hygiene and limited understanding of and compliance to biosecurity
  - 2 High industry fragmentation, such that small farmers have limited resources to focus on biosecurity
  - 3 Close proximity of farms, allowing disease to spread quickly between them
  - 4 High degree of geographic movement of live biomass, allowing disease to spread



Farming / Grow Out





**PSD** – The Project

### **Limited Number of Suitable Sites Globally**

The ideal site for industrial scale prawn aquaculture has a number of key required characteristics, which significantly constrain the number of suitable sites globally

#### **Key Required Characteristics**

- 1 Geographic remoteness to underpin biosecurity
- 2 Suitable climate and temperature
- 3 Disease free environment
- 4 Coast line with high tidal movements
- 5 Large land area with lack of competing uses
- 6 Large land area with flat topography
- 7 Access to labour
- 8 Access to export terminals
- 9 Proximity to end markets

#### **Suitable Prawn Farming Regions Globally**



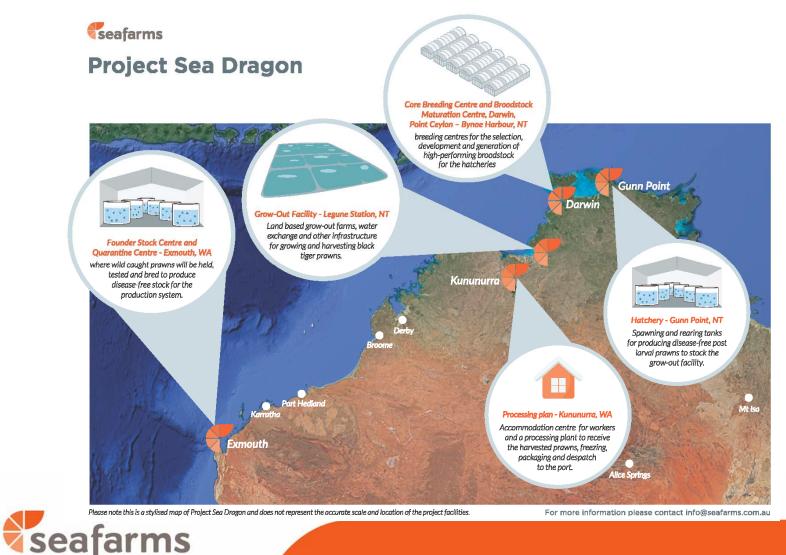
- Countries with prawn aquaculture >1% of global prawn aquaculture

  PSD project location within Australia
- An extensive geospatial mapping exercise conducted by SFG of the Northern Australian coast line identified only a handful of sites that met the required site characteristics



### **Project Sea Dragon – Location Overview**

The core facility of PSD, Legune Station in the Northern Territory, has been a carefully selected location. SFG holds an Access and Option Agreement over Legune Station.



### A Fully Vertically Integrated Project

Complete end to end control of operations will allow SFG to ensure absolute biosecurity and process control

**Key Process Steps in PSD** 

Genetics & Broodstock

Hatching / juveniles

Farming

Processing

Sales, marketing and logistics



- Founder Stock Centre has been established at Exmouth
- PSD has its own proprietary selective breeding program
- Wild stocks domesticated for minimum two years to ensure specific pathogen free prawns
  - Program already commenced
- Continuous advanced genetic marker selection to enable productivity improvements and disease resistance
- Close cooperation with CSIRO and James Cook University
- SFG will own and control its own broodstock



- Hatchery to be set up near Darwin at Gunn Point
- Discrete bio-secure location
- Will supply PSD with Post Larvae (PL) ready for release into ponds
- Stage 1 of the hatchery will produce over 16 million PLs/week
- PLs will be trucked to the grow out farms at Legune in special tanks



- To be built at Legune Station
- Separate "farms" of c. 360 to 400 Ha each, consisting of 36-40 ponds of 10 Ha each
- Stage 1 permitting for 1,120 Ha of ponds
- Full project to comprise 9 stages to complete 10,000 Ha of ponds
- Good quality seawater with recirculation
- Sufficient fresh water to manage salinity in ponds



- Processing plant to be constructed near Kununurra ~100km on all weather road to be built by state governments from Legune station
- Expansion along with project stages
- Processing primarily frozen Head on Shell on prawns
- Modern processing equipment



- PSD is targeting export markets
- Leverage off the recognised Crystal Bay Prawn brand in both existing and new markets
- Product will be packed into reefer containers and trucked to the best available port and shipping line (Wyndham, Darwin, Fremantle or Adelaide)



### **Key Project Components**

Stage 1 of PSD will involve the construction of 1,120 Ha of ponds as well as all supporting infrastructure for Stage 1 and subsequent stages

- Stage 1 of PSD will comprise of:
  - Founder stock centre
  - Breeding facilities
  - Hatcheries
  - Grow out facility of 3 "farms" totaling 1,120 Ha of ponds
  - Supporting infrastructure for full scale project
- Each farm will consist of up to 40 individual ponds of approximately 10 Ha in size that can operate as an independent production unit
- Feed for PSD will be sourced predominantly from South East Asia
  - Significant supply competition likely to keep pricing pressure low
  - SFG is considering building its own feed mill for later stages to reduce costs further

#### **Stage 1 Production System**

Wild Broodstock

- Quarantine / Founder Stock Centre (FSC)
  (Exmouth)
  - Sized ultimately for 100+ families
  - First stock: Q3 2016
  - Back-up Breeding Centre (BBC) also located in Exmouth
- Core Breeding Centre (CBC)
  (Point Ceylon, Bynoe Harbour)
  - Sized ultimately for 400 families
- First stock: Q1 2020
- Broodstock Maturation Centre (BMC)
  (Point Ceylon, Bynoe Harbour)
- Output (Stage 1): ~700F:700M per week
- First stock: Q2 2020

Denotes flow of prawns in value chain



Processing Plant (Kununurra)

- Grow Out Facility
  (Legune)
  - Output (Stage 1): ~12,000t p.a.
  - First stock: Q2 2021
  - Facility and associated infrastructure include:
    - Grow out centre / farms
    - Power station
    - Water infrastructure
    - Accommodation facilities
    - Roads

#### (Profess

(Preferred location Gunn Point)

Hatchery (HAC)

- Output (Stage 1): ~700F:700M per week
- First stock: Q4 2020



### **Industry-Leading Biosecurity Control**

PSD's strategic choice of locations is one aspect of a holistic approach to make PSD one of the most biosecure aquaculture projects in the world

#### **Industry-Leading Biosecurity Standards and Control**

#### **Natural Geographic Biosecurity**

- Internationally significant diseases not present
- Geographic isolation from centres of population and all other prawn producers
  - Nearest prawn producer is on Australia's East Coast
- Separate locations for breeding, grow out and processing activities to mitigate disease risk
  - Multiple levels of redundancy and restocking opportunities

#### Vertically Integrated Business Model

- Full vertical integration allows for selection of healthy, Specific Pathogen Free (SPF) broodstock, eliminating pathogen entry pathway through broodstock
- World-class genetic breeding program in collaboration with James Cook University and ARC
- Control over the entire aquaculture value chain allows SFG to rapid react to issues and any disease events

#### Project Design Considerations Specifically for Biosecurity

- Buffer zones between farms
- Best practice water management
  - Prawns are in water treated by Ozone and UV light before grow-out facility
  - Extensive use of recycled water at grow-out facility to limit introduction of potential disease vectors
- Strict personal and vehicle access controls and movement protocols

#### **Emergency Action Protocol**

- Established emergency action protocol that "ring fences" any disease outbreak
  - Day 1: priority harvest of affected pond and surrounding ponds
  - Day 2: harvest next immediate neighbouring ponds
  - Day 3 -7: harvest remaining ponds in the farm
- Protocol focused on containment and minimising premature terminal harvests

Geographic separation across facilities and SPF high health broodstock limit entry pathway for pathogens; additionally farms can be restarted quickly after any disease event with SPF stock, minimising any losses



### **Extensive Design Work Has Been Completed**

Through leveraging the knowledge of existing operations in QLD and the completion of bespoke design studies including a detailed feasibility study, SFG has de-risked project development for PSD

#### Commentary

- All required preliminary and detailed design studies have been completed:
  - A Concept study
  - Pre-feasibility study
  - Water Balance modeling to determine freshwater availability and reliability
  - Power and energy
  - Workforce and accommodation study
  - Transport and logistics study
  - Detailed Feasibility study
- In addition, SFG has already commenced acquisition and commencement of operations at a number of sites
  - Acquisition of prawn brood-stock and breeding facility in Exmouth
  - Transfer of best practice techniques and knowledge from QLD operations

#### Significant Research and Resources Invested So Far





### PSD – Project Status

SFG has received key environmental approvals and the Northern Territory Government Project Development Agreement (PDA), and has agreed the Indigenous Land Use Agreement (ILUA) with the traditional owners. The start of significant construction is expected to commence in the dry season of 2018

Key Project Workstream Status		
	Workstream	Status
1 Project Design	<ul><li>Earthwork studies</li><li>Feasibility study</li></ul>	<b>√</b>
Site access and agreements	<ul><li>Legune Station</li><li>Staff accommodation lease</li><li>Exmouth Quarantine and Founder Stock Centre operational</li></ul>	√ √ √
Approvals and permits	<ul> <li>Environmental Impact Statement         (EIS) assessment complete         <ul> <li>Legune Station</li> <li>Bynoe Harbour Breeding             <ul> <li>Facilities</li> <li>Facilities</li> </ul> </li> </ul> </li> </ul>	<b>√</b>
4)	<ul><li>Licenses / permits</li><li>Project Development Agreement executed</li></ul>	In progress
NT Government	Non Pastoral Use Permit issued	✓
Traditional land owners	ILUA agreed with traditional land owners	✓
Capital Raising Due Diligence	Engagement with independent due diligence experts	<b>~</b>
sea	arms	

- SFG has received required environmental approvals for Stage 1 at Legune Station with the receipt of the Federal Government's approval made under the Environment Protection and Biodiversity Conservation Act in May 2017. Key conditions of the approval include
  - Developing and implementing a water quality monitoring and management program
  - Establishing a scientific advisory group to advise on matters relating to threatened and migratory waterbirds, including a waterbird impact mitigation and monitoring program
  - Specific precautions during construction and operation to avoid potential impacts to marine life, including turtles, sawfish and river sharks
- Secondary licences expected to be approved in accordance with EPA recommendations
- The Northern Territory Government Project Development Agreement (PDA) has been executed
- SFG has agreed the Indigenous Land Use Agreement with the Traditional Owners
  - ILUA applies to all 9 stages of PSD, with no further agreement required beyond Stage 1

### **Key Sources of Government Support for PSD**

Strong Federal and State / Territory Government support for PSD will help facilitate project development and delivery of supporting infrastructure

Component	Benefit for PSD	Description	
Major Project Status	Priority and streamlined access to individual governments via relevant ministers to facilitate approvals process	PSD was awarded Major Project Status Northern Territory Government July 2015 Federal Government July 2015 Western Australia Sep 2015	
Northern Australia Infrastructure Facility (NAIF)	Seafarms has initiated a dialogue for PSD to access concessional project loans	The Australian Federal Government has made A\$5 billion available in concessional loans for infrastructure in the north of Australia through the NAIF	
China-Australia Free Trade Agreement (ChAFTA)	<ul> <li>Elimination of Chinese tariffs on Australian prawns within 4 years will improve cost competitive position of PSD's product further</li> <li>China is expected to account for 38% of global seafood demand by 2030¹</li> </ul>	<ul> <li>ChAFTA enacted by both governments in June 2015</li> <li>Since the China-New Zealand FTA was introduced, exports of New Zealand seafood to China have quadrupled</li> </ul>	
Project Development Agreement	<ul> <li>Government support package</li> <li>Funding to upgrade access roads to all facilities</li> <li>Superior and secure land tenure at all sites: Legune, Bynoe Harbour, Gunn Point and Kununurra</li> </ul>	Signed Project Development Agreement legally binding on government to provide the pathway for development beyond Stage 1	
Other	More efficient licence and permit approval processes for PSD, including Legune Station use as aquaculture	Introduction of reforms to reduce red tape and amend pastoral leases	



1. Source: World Bank.

### **Government Support for PSD**

SFG expects to secure major government support for the project from state and federal government agencies. Support to date highlighted below:

Government Support	Details
WA Road Upgrade (Kununurra to WA/NT border)	WA Government funding (Budget approved)
Long term land lease with WA Gov	PSD Processing Plant to be located at Kununurra
Keep River Road Upgrade	Anticipated construction commences July 2018
Garrjang Village	Provision of 250 man construction camp for a nominal rental for 5 years
Gunn Point / Bynoe Harbour - Upgrade Road	Anticipated construction commences May/July 2018
Long term land lease with NT Gov	PSD Hatchery - to be located near Darwin at Gunn Point.



### **Project Delivery Strategy**

The project delivery strategy of PSD as a modular project underpins is scalability for future stages

#### **Project Delivery Strategy**

- Stage 1 of PSD is designed to be constructed mainly during the dry season
- Project delivery will comprise two main phases

Execution Phase

Includes detailed design, engineering, procurement, construction and commissioning of all the required capital works

Operational Ramp Up Phase

- Includes handover, commencement and progressing increase in production
- The development of Stage 1 will require the concurrent detailed design, construction and commissioning of the facilities at each location

#### **Contract and Procurement Plan**

- The key strategies proposed for the Execution Phase include:
  - Procurement packaging to optimise the buying effort versus supplier performance
  - The contract packaging to be designed to maintain competitive bidding with sole-source awards only adopted when justified
  - Maximise the use of local and indigenous contractors/suppliers where appropriate and as agreed in the ILUA
  - Australian and offshore sourcing, to offer the best solution for cost, quality, schedule, reliability, commissioning, warranties and ongoing technical support
  - Recognition that the capital expenditure will be over an extended period, providing opportunities for PSD to selfperform certain scope and term contracts for other parts of the scope



### **Project Delivery Allocations**

#### **Project Delivery**

- The construction works have been broken down into defined work packages with preliminary cost forecasts based upon market testing
- Several components of project construction risk mitigated by use of third-party contractors
- Construction for earthworks, the technically simple aspects of project, to be self-performed

Project Delivery	
Project Component	Construction Party
Earthworks	SFG self perform
Facilities, plants and roads	Third-party contractor, largely fixed price basis
Power station	Third party BOO

#### **Grow Out Facility Pond Earthworks**

- The grow out pond earthworks represent a low complexity construction project and will be performed using SFG's in house team and own equipment
  - This will allow retention of this skill base for construction of future stages of PSD, and make this available for maintenance of ponds already constructed
- A bulk earthworks trial was conducted in 2016 as part of the feasibility study









# Seafarms Group – CO2 Australia Limited

### **CO2** Australia Limited

- CO2 provides carbon and environmental services
- 100% owned subsidiary
- Profitable business providing cash flows for SFG
- Continue to secure new business
- New opportunities being identified
- Owns a substantial portfolio of emissions credits
- Well positioned for resurgence in the carbon economy



### **Directors and Officers**



Ian Trahar
Executive Chairman



Dr Chris Mitchell Executive Director



Dallas Donovan Chief Operating Officer



Harley Whitcombe Executive Director and CFO



