

NOVACQ™ PRESENTATION

**UBS EMERGING COMPANIES CONFERENCE
SERIES – FOOD AND AGRIBUSINESS
30 NOVEMBER 2016**



The purpose of this presentation is to provide an update on:

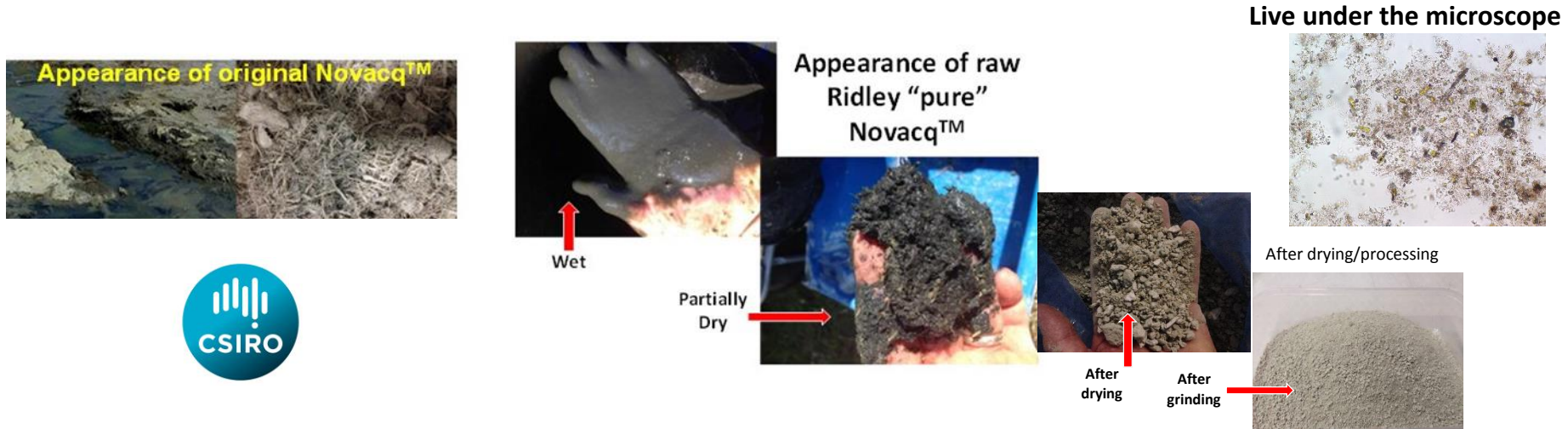
- ❑ What is Novacq™ and where we started from
- ❑ Our competitive advantage stemming from Novacq™
- ❑ Historical shrimp/prawn production globally and a view on feed demand based on a conservative Feed Conversion Ratio (FCR)
- ❑ Significant milestones achieved to date at Yamba, NSW and in Thailand, and production and sales strategies for each region
- ❑ Overview of short term milestones that we will update the market on as they are achieved.



WHAT IS NOVACQ™ AND WHERE WE STARTED FROM



Novacq™ is a patented CSIRO technology. It is a microbial biomass ingredient produced from the use of a carbon waste stream. Effectively a bacterial floc product from the same bacterial family that is naturally present in marine estuaries. This microbial process developed by CSIRO produces a non-living bioactive substance, which acts as a metabolic stimulant in crustaceans.



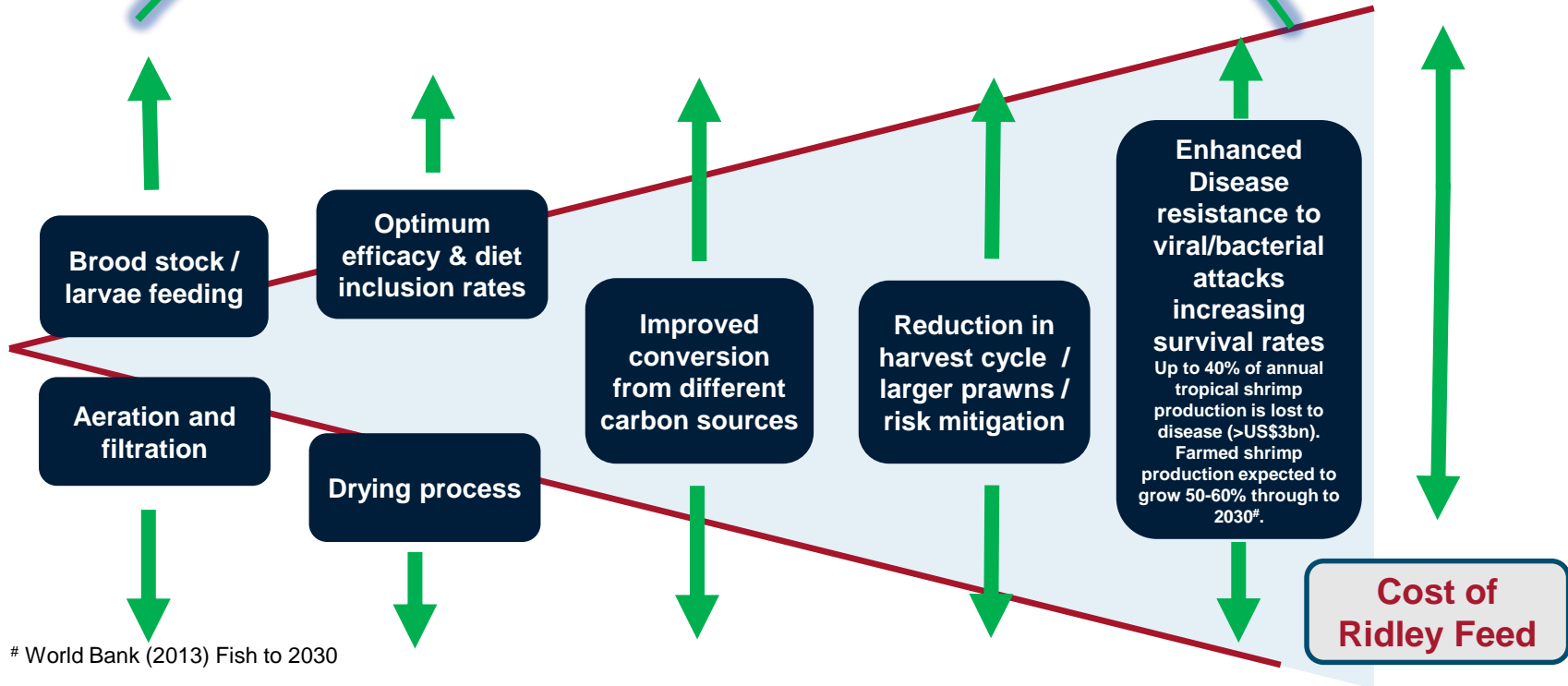
Since 2009 Ridley worked with CSIRO to evaluate the commercial potential of Novacq™. Since 2013, under licence agreements with CSIRO specific to crustaceans, we have been working to commercialise production and distribution of Novacq™ in Australia, Thailand and Indonesia, with distribution rights in Malaysia and Philippines.

HOW TO IMPROVE THE
JAWS OF VALUE WITH
NOVACQ™

CSIRO Licence

Crustacean – Australia, Thailand, Indonesia,
Malaysia, Philippines Licence
We are endeavouring to extend our existing
licences to new territories and applications

Livestock
Yield /
Performance



World Bank (2013) Fish to 2030

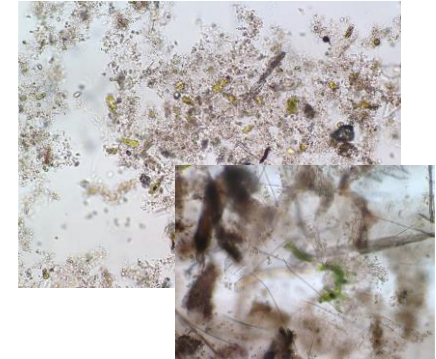
NOVACQ™ : A REVOLUTION IN SHRIMP PRODUCTION....



- ❑ Conducted a number of lab-based trials over the past 4 years in both Australia and Thailand, consistently demonstrating growth rate improvements in the vicinity of 40% or more. In addition to the improvement in feed conversion rates of 20-30% from accelerated growth, the trials are exhibiting improvements in animal well-being via enhanced resistance to the challenge of viral/bacterial attacks and thereby increasing survival rates.

- ❑ What does it do?
 - ✓ Novacq™ acts as a 100% natural metabolic stimulant that **increases food intake** and permits the animal to **utilize the feed more efficiently**.
 - ✓ Because of this, the **animal will grow faster** & provide a shorter culture cycle, using less feed to grow a bigger shrimp. It **improves Feed-Conversion Ratio**: saving money as feed cost is the major farming operational cost.
 - ✓ Novacq™ also appears to **improve disease resistance**.
 - ✓ Novacq™ can be used to **help replace fishery resources in shrimp diets** - important for consumers, retailers and sustainability.
 - ✓ Novacq™ can **reduce diet protein levels without performance loss** - important to help control nutrient levels in ponds and effluent discharge to the environment.

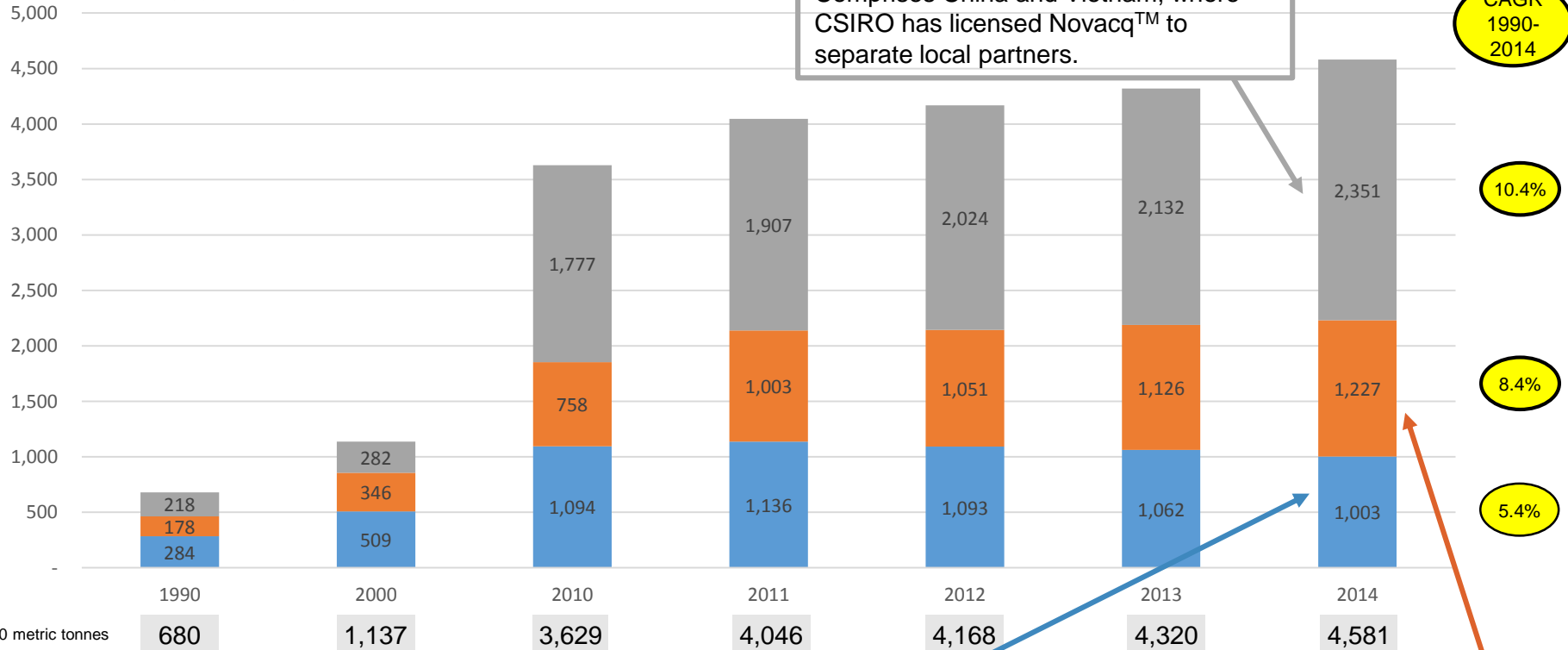
Live under the microscope



GLOBAL SHRIMP/PRAWN PRODUCTION



Shrimp/prawn production ('000 metric tonnes)



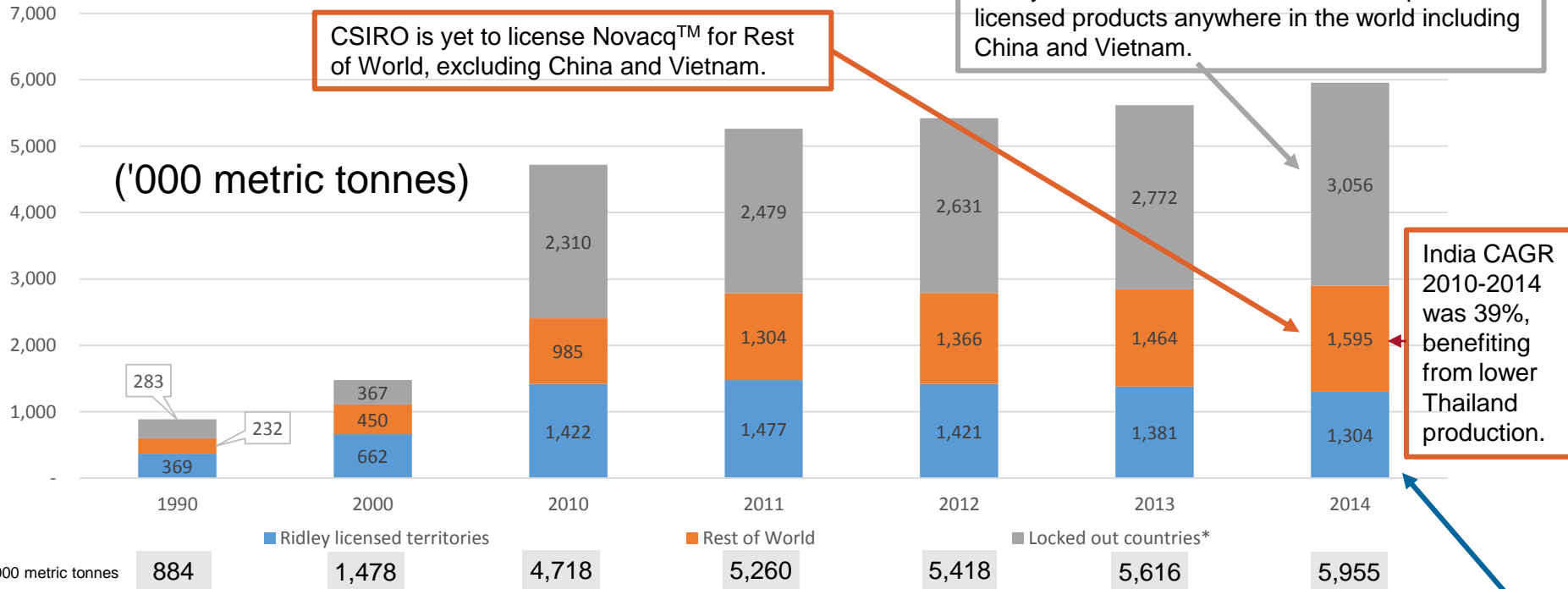
Ridley licensed Novacq™ territories: Thailand, Indonesia, Malaysia, Philippines and Australia, with Thailand and Indonesia making up approx. 90% of Ridley territories production in 2014. Shrimp production was 1 million tonnes in 2014. Australia a small player on the world scale.

India and Ecuador made up approx. 60% of total Rest of World production in 2014.

GLOBAL ESTIMATED FEED DEMAND



Estimated shrimp/prawn feed requirement assuming 1.3 standard FCR *



CSIRO is yet to license Novacq™ for Rest of World, excluding China and Vietnam.

Ridley can sell Australian made Novacq™ licensed products anywhere in the world including China and Vietnam.

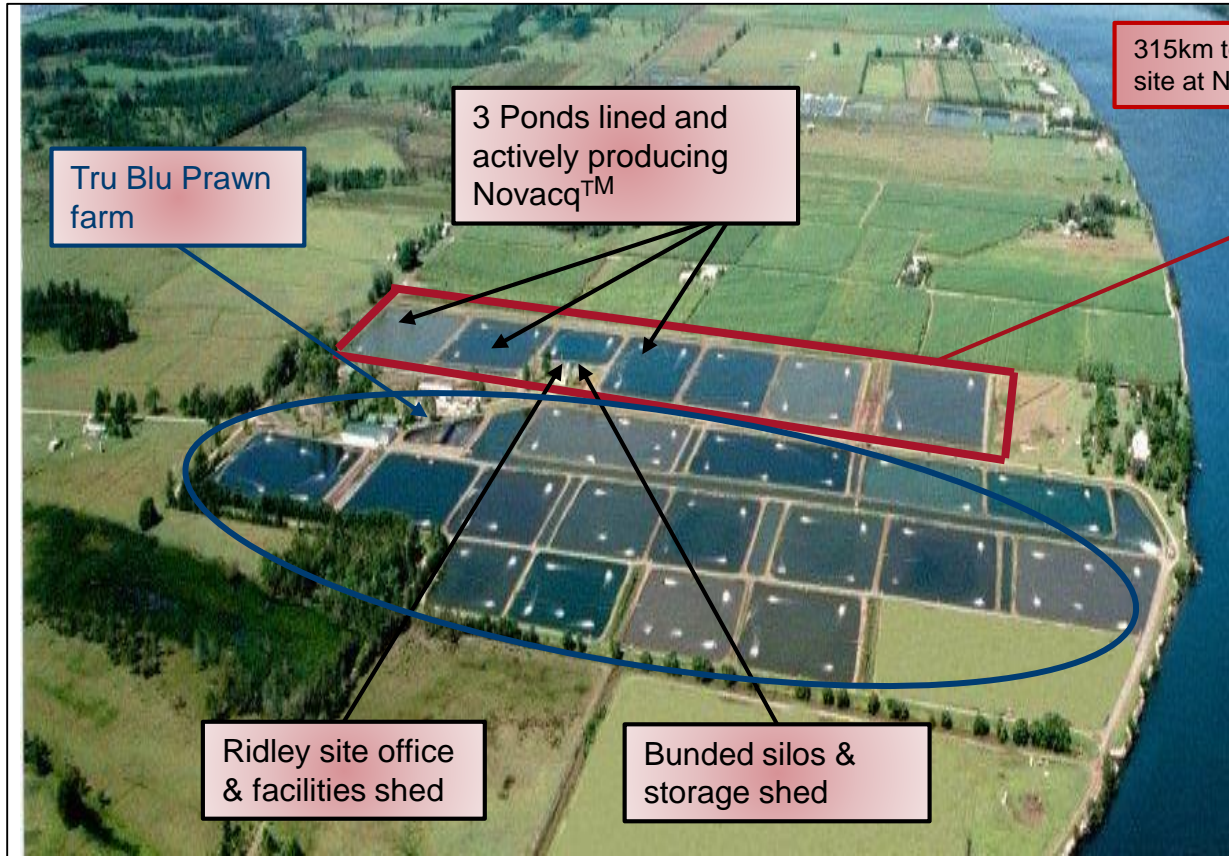
India CAGR 2010-2014 was 39%, benefiting from lower Thailand production.

FCR is Feed Conversion Ratio, namely the ratio that highlights how many kilos of feed an animal eats to put on a 1kg of weight of the prawn. The lower the FCR, the better the return to the prawn farmer. A conservative 1.3 FCR has been assumed in producing the above estimates of demand for feed, but in reality varies by country, feed quality and species of shrimp/prawn.

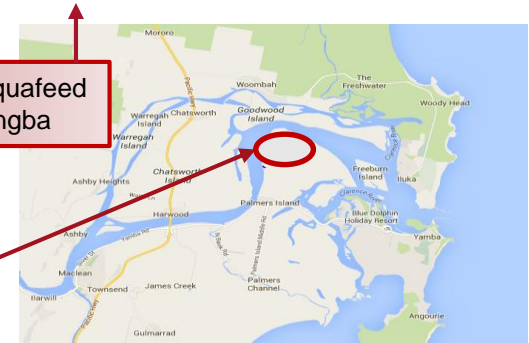
Thailand production reduced by nearly 50% due to Early Mortality Syndrome (EMS) outbreak in 2013. Production is expected to recover in coming years to pre 2013 levels (600,000 tonnes in 2012) however 300,000 tonnes is the expected production level in 2016 (source: Thai Shrimp Association).

YAMBA

YAMBA NOVACQ™ PRODUCTION SITE



315km to Aquafeed site at Narangba



Project milestones at Yamba:

- ❑ Ridley has invested c.A\$2m in calendar 2016 at Yamba to develop Novacq™ production, including pond preparation and fit-out, infrastructure and execution of a 10 year lease on enough pond capacity to fully service 100% of Australia's current prawn demand and expected growth.
- ❑ Note our assessment of market size does not assume any demand from Seafarms Group Ltd, which is targeting to become the largest producer of shrimp in Australia (Project Sea Dragon).

NEXT TWELVE MONTHS - YAMBA (1)



Standard prawn ponds have to be levelled and lined with pvc sheeting

Silo for pond-side settlement of harvested Novacq™ (fore) & silo storage (back)



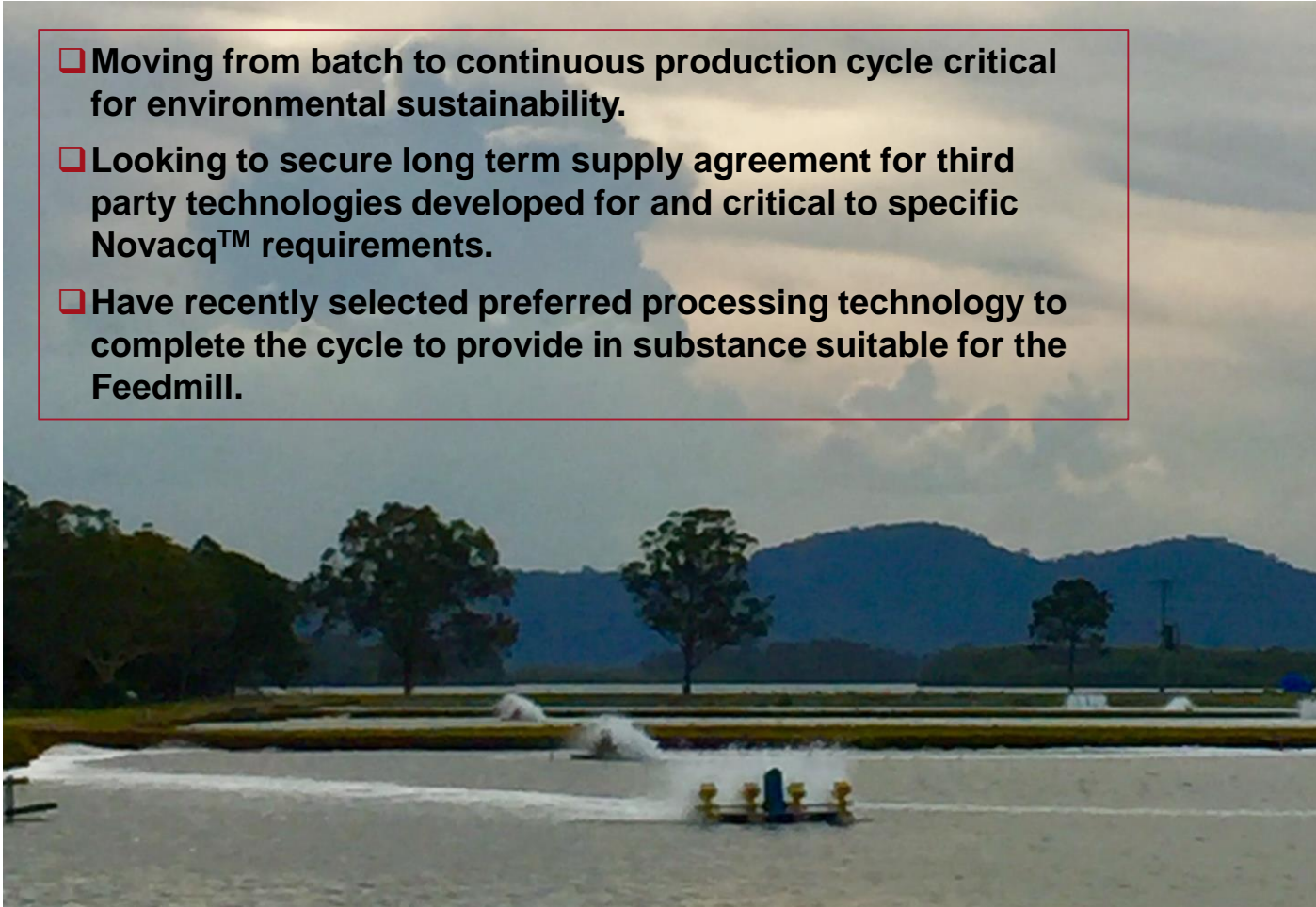
- ❑ Storage, production, harvesting, aeration, dewatering and drying cycle equipment and site security to be located/ installed on site with associated infrastructure.



- ❑ **Moving from batch to continuous production cycle critical for environmental sustainability.**
- ❑ **Looking to secure long term supply agreement for third party technologies developed for and critical to specific Novacq™ requirements.**
- ❑ **Have recently selected preferred processing technology to complete the cycle to provide in substance suitable for the Feedmill.**

Strategy for Yamba:

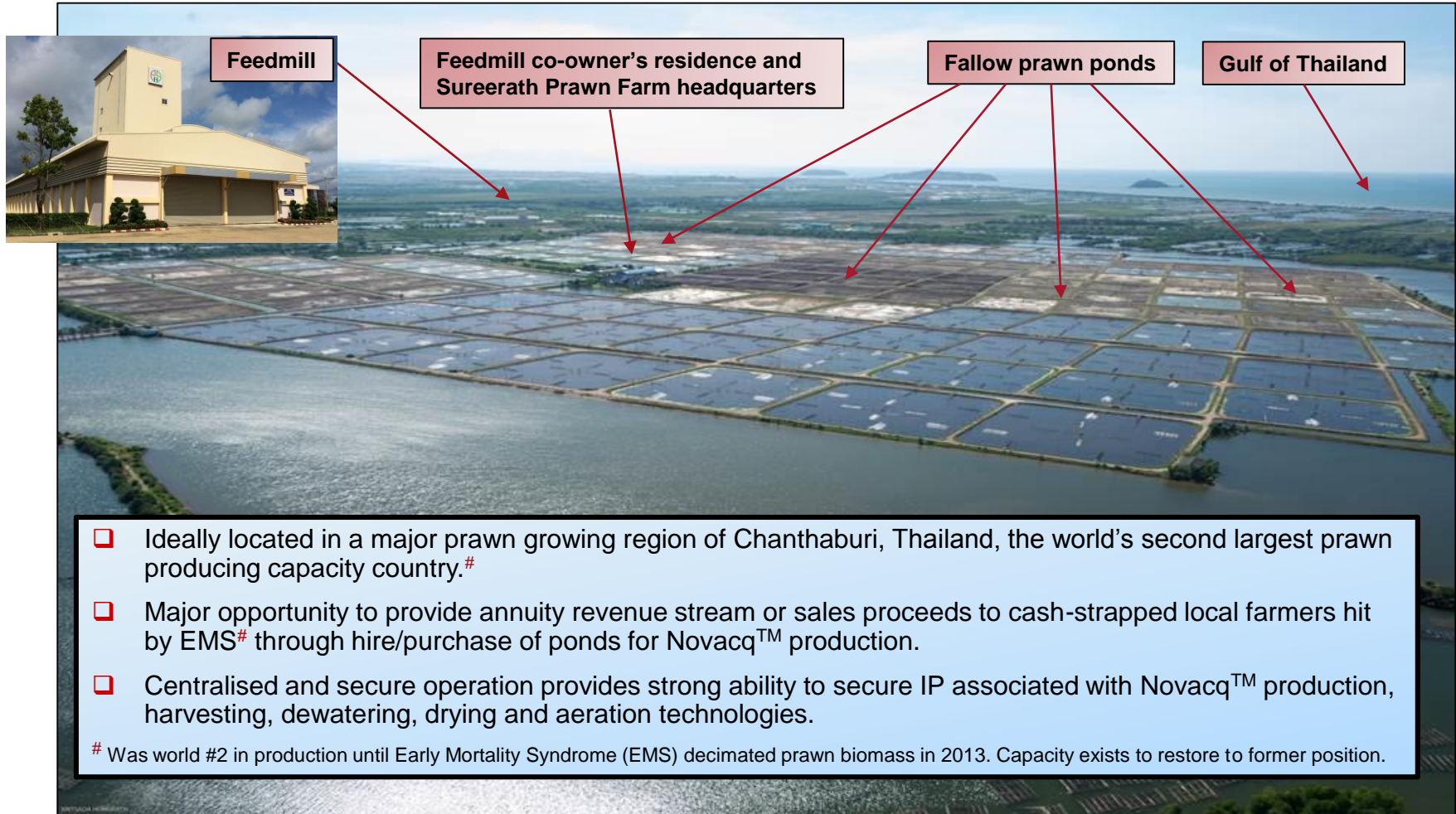
- ❑ Produce Novacq™ at Yamba to service the Australian market and export trial quantities to Thailand to expedite in-field feed trials.
- ❑ Adhere to process of continuous improvement of all production facets to progressively increase harvest yield, efficacy, reduce commercial costs, and determine optimum inclusion rate in Ridley diets.
- ❑ Transport full cycle technology to overseas Ridley Novacq™ production site(s), commencing at Chanthaburi.
- ❑ Sell Novacq™ to the consumer either included as a full feed (pellet) or partial feed (pre-mix).



THAILAND

- ❑ Entered into a strategic joint venture agreement with a Thai feed-milling and progressive shrimp farmer (Jan 2016) to produce Ridley diets with Novacq™ inclusion for Thai market.
- ❑ In addition, through this joint venture and at a cost of A\$1.1 million, we own 49% of a current 30,000 tonne per annum capacity feedmill, with the ability to increase capacity to 55,000 tonnes with a second production line installed and 110,000 tonnes by 100% replication of the expanded facility.
- ❑ Investment of c.A\$7.5 million approved by Ridley Board to develop Novacq™ production in Thailand, including the long term lease of 10 hectares of pond space currently under negotiation. The capacity exists at the same site or with local land owners to expand the Novacq™ production footprint by up to a further 140 hectares.
- ❑ Thai Government approval granted to build two blending facilities in Thailand and own outright. The location for the site is under discussion with Thai government and to be in regional zone close to feedmill and deepwater port(s).

Our journey in pictures follows.



NEXT TWELVE MONTHS – CHANTHABURI (1)



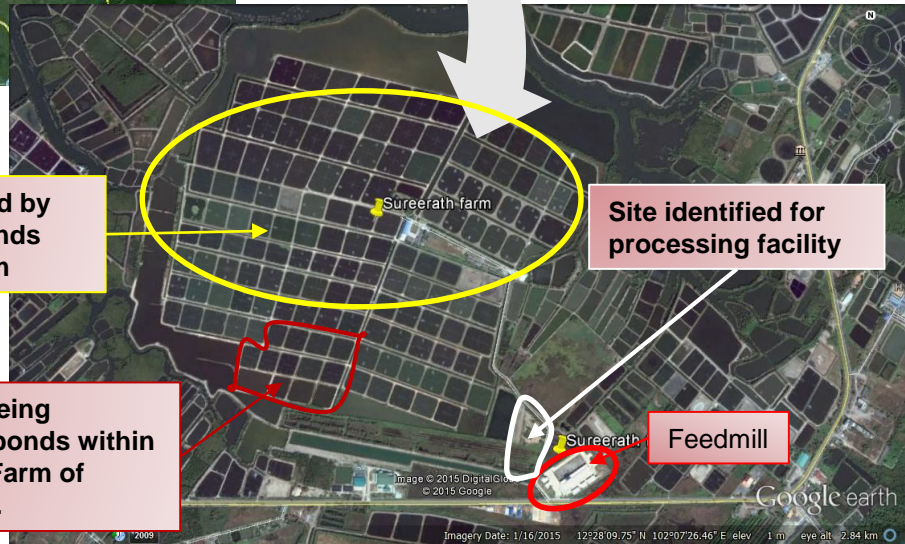
- ❑ Secure the long term lease of ponds for local Novacq™ production
- ❑ Secure licence to import Yamba Novacq™ for inclusion in trial diets

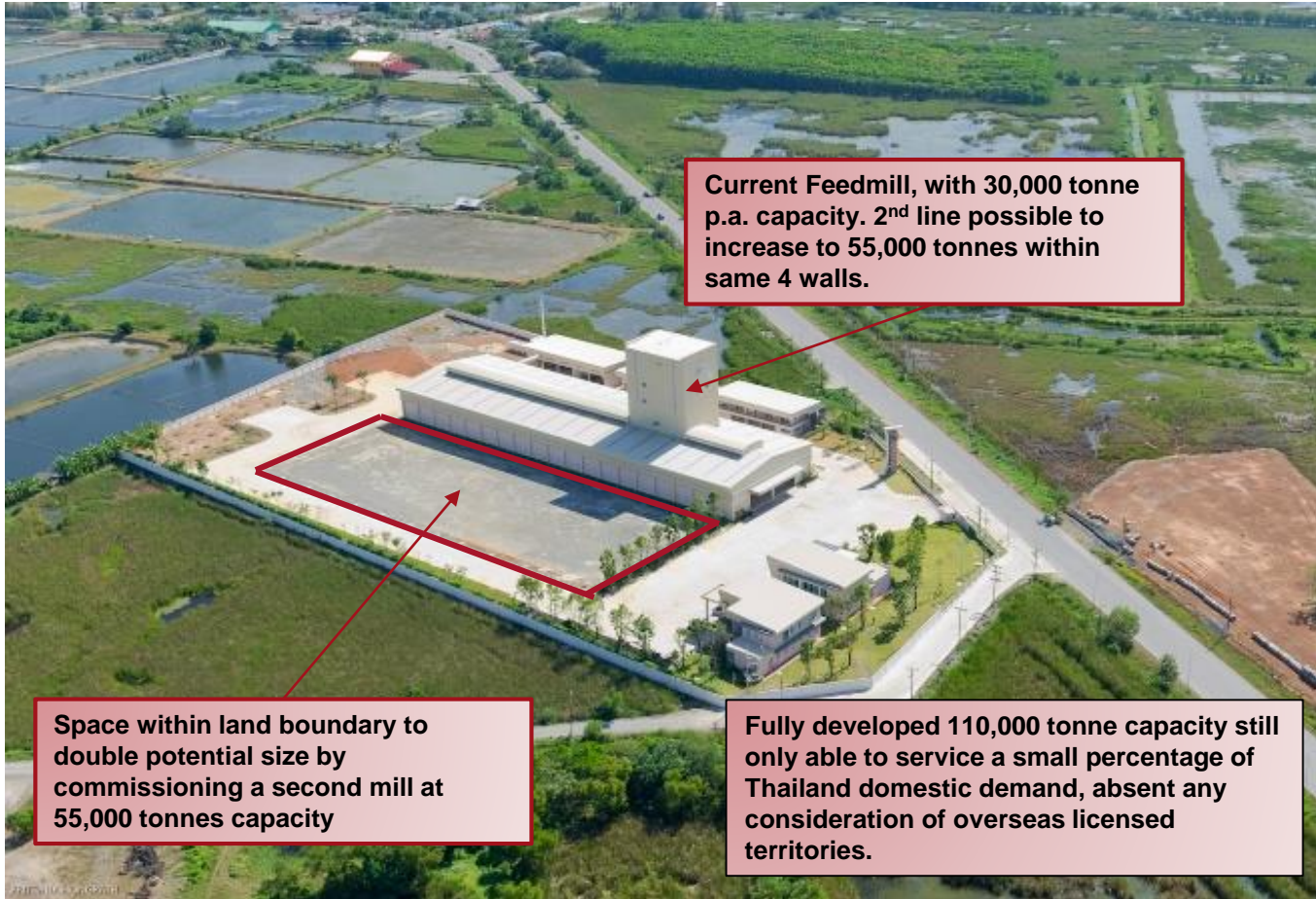
250km SE of Bangkok in Bay of Thailand

- ❑ Generate positive Novacq™ trial data to prove up value proposition to local farmers and develop a pull-through marketing strategy

Capacity to expand by securing other ponds within current farm

Long term lease being negotiated for 14 ponds within Sureerath Prawn Farm of feedmill co-owner.





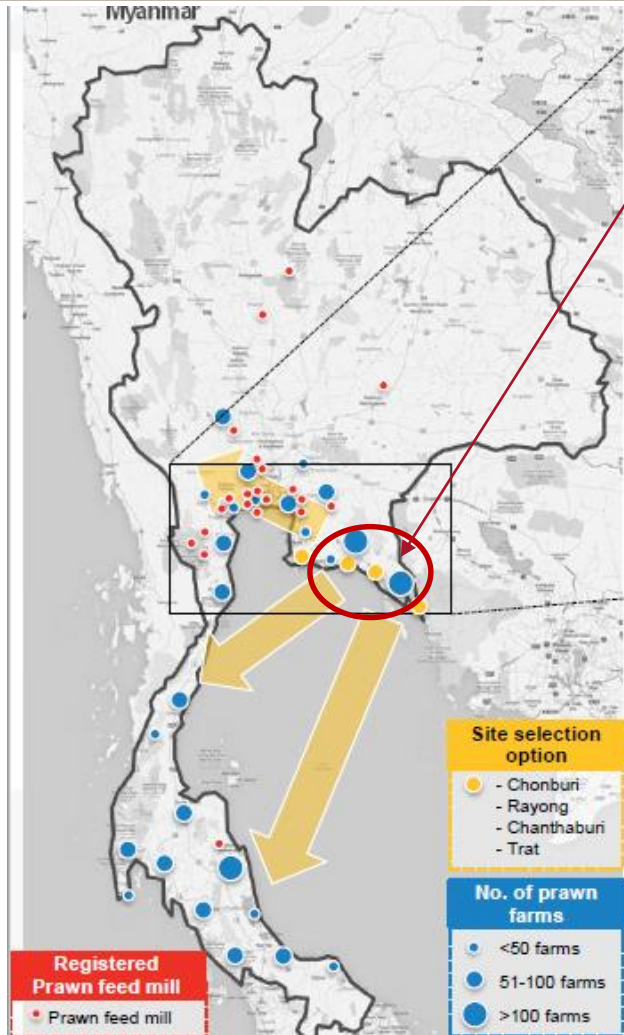
Current Feedmill, with 30,000 tonne p.a. capacity. 2nd line possible to increase to 55,000 tonnes within same 4 walls.

Space within land boundary to double potential size by commissioning a second mill at 55,000 tonnes capacity

Fully developed 110,000 tonne capacity still only able to service a small percentage of Thailand domestic demand, absent any consideration of overseas licensed territories.

- ❑ Work with a local Thai engineering firm to design a blending operation to produce a prawn feed premix combining Novacq™, with Land Animal Protein, Vegetable Protein, Vitamins and Minerals.
- ❑ We have already received approval to build two blending facilities with combined capacity of c.140,000 tonnes (t) output, equivalent to 467,000t of finished feed per annum at expected inclusion rates.
- ❑ The blending facilities will allow us to service multiple markets from a single site, securely, quickly and cost effectively, and to derive synergy with other micro ingredients.

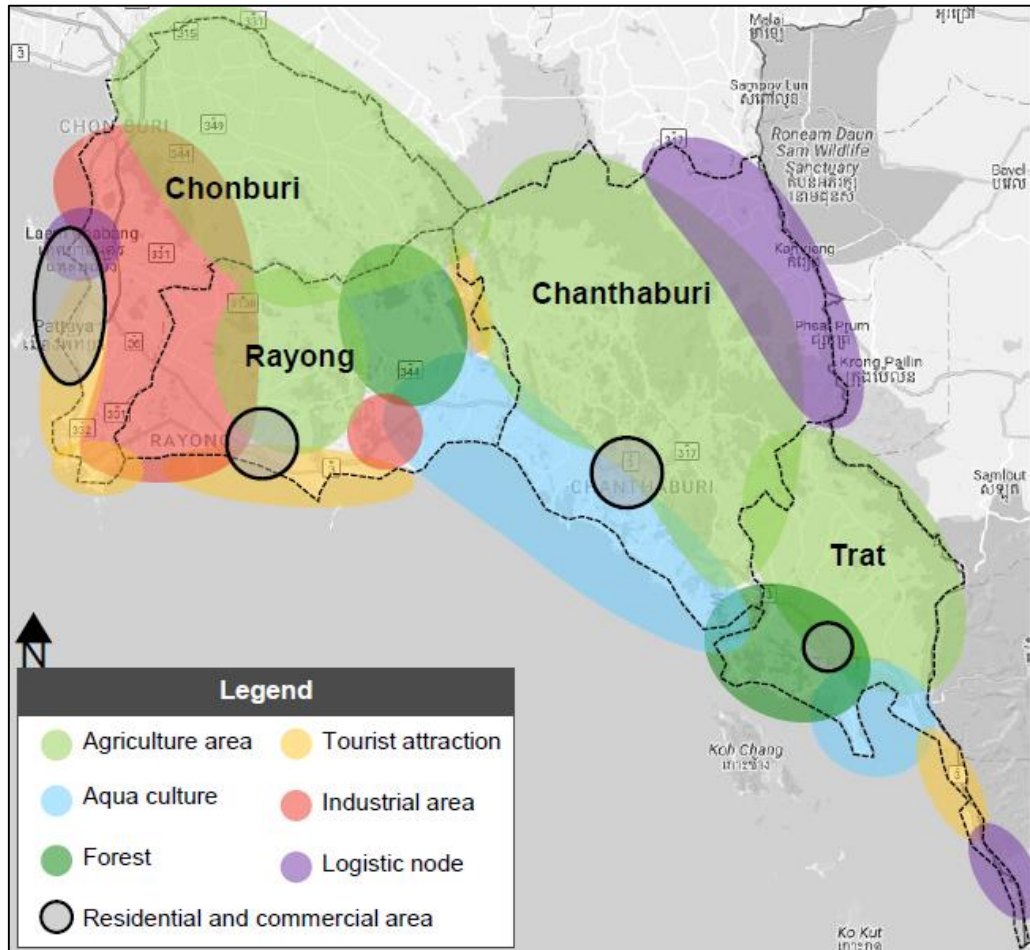
THAILAND – SHRIMP INDUSTRY OVERVIEW



- ❑ The ideal location to build two blending facilities is adjacent to Chanthaburi feedmill.
- ❑ Opposite is a map of Thailand, showing location and density of prawn feed mills and prawn farms.
- ❑ If not possible on site, an alternative location for a blending facility is Trat, c.60km from the feedmill.

	Province	No.Prawn farm
East	Chachoengsao	>100
	Chanthaburi	>100
	Trat	>100
	Rayong	32
	Chonburi	8
Central	Samut Prakan	94
	Suphanburi	63
	Samut Sakom	50
	Nakhon Pathom	34
	Nakhon Nayok	34
	Ratchaburi	27
	Samut Songkram	17

THAILAND – TOWNSHIP AND LOCALITIES



- ❑ Among the 4 Thai provinces shown opposite, the most suitable location for prawn ponds are the coastal land along Chanthaburi and Trat.
- ❑ Chonburi and Rayong are not suitable because of existing heavy industry and risk of water pollution, and are further in distance from the feedmill.
- ❑ Trat has 4 lane highway access, airport, and deep water port being built in a special business trade zone.



THAILAND – FUTURE DEVELOPMENT IN SPECIAL BUSINESS ZONE – TRAT KLONG YHAI PORT



Developer	Marine department, Ministry of Transport
Contractor	ITD – UNIQUE Joint Venture
Project Value	1,295,000,000 Baht (c.A\$49m)
Area	26 rai (41,600 sqm)
Status	Under construction
Estimated completion	Q4 2016



- ✓ Capacity to hold 500 tonnes of cargo
- ✓ Support growing international trade



MILESTONES TO REACH IN SHORT TERM

- ❑ Continue to develop the continuous improvement process to aerate, produce, harvest, dewater and dry the Novacq™ produced at Yamba.
- ❑ Finalise the long term supply agreement to secure the technology underpinning the Novacq™ production process.
- ❑ Progress feed field trials in Australia and commence sales at commercial volumes.
- ❑ Establish licence to import Yamba Novacq™ into Thailand and include in Chanthaburi feedmill trial diets.
- ❑ Finalise the long term lease of current ponds in Thailand, prepare the ponds, and commence production of Novacq™ in Thailand.
- ❑ Secure site(s) for Novacq™ blending facilities in Thailand, preferably on site at Chanthaburi.
- ❑ Work with CSIRO to further develop our ongoing Novacq™ R&D program and jointly target other Novacq™ applications and unlicensed territories.



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