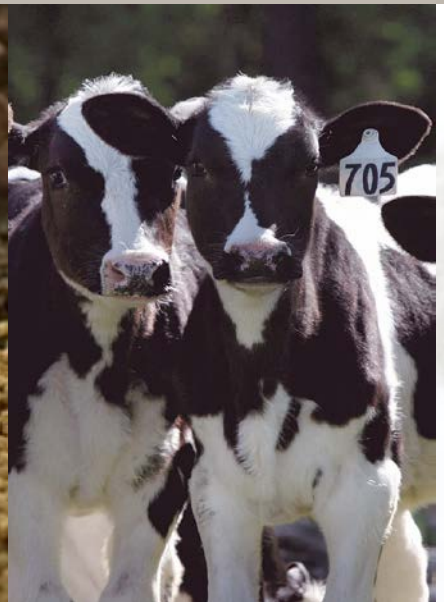
SUSTAINABILITY AS IT RELATES TO FOOD AND FEED

A Feed Perspective

Tim Hart, CEO - Ridley Corporation

30 May 2016



OUR GLOBAL FOOTPRINT

By 2050….

If current consumption & production patterns remain the same and our population continues to rise at the same rate……

….we will need **three planets** to sustain our way of living and consumption

Source: *WWF International, Living Planet Report, 2012*

A lift in Australian livestock production will support local population growth & regional demand...

Population of ~30 million by 2030, with greater demand for:-

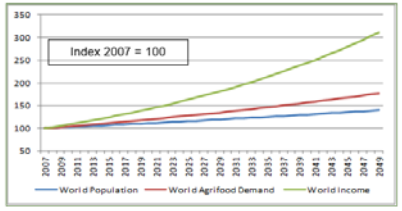
- **Chicken:** affordable source of protein, solid growth of 3% p.a.
- **Eggs:** 45% increase in eggs laid in 2013 vs 2003 (*AECL*)
- **Fish:** consumption up 25% by 2022 (*OECD FAO*)
- **Dairy:** population growth plus greater popularity of yoghurt & dairy dessert categories

... but forecast growth in livestock production can only occur with equivalent growth in the supporting stockfeed industry

Australian agribusiness well resourced to meet food demand growth opportunity

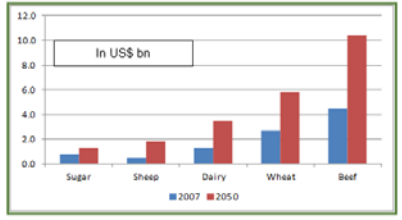
DEMAND

World population >9 bn by 2050, income & food demand growing faster



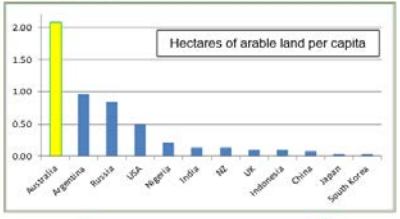
AUS EXPORTS

Substantial uplift in exports across meat, livestock products and crops



LAND

Australia enjoys huge advantage in arable land vs peers



AUS ENERGY RESERVES

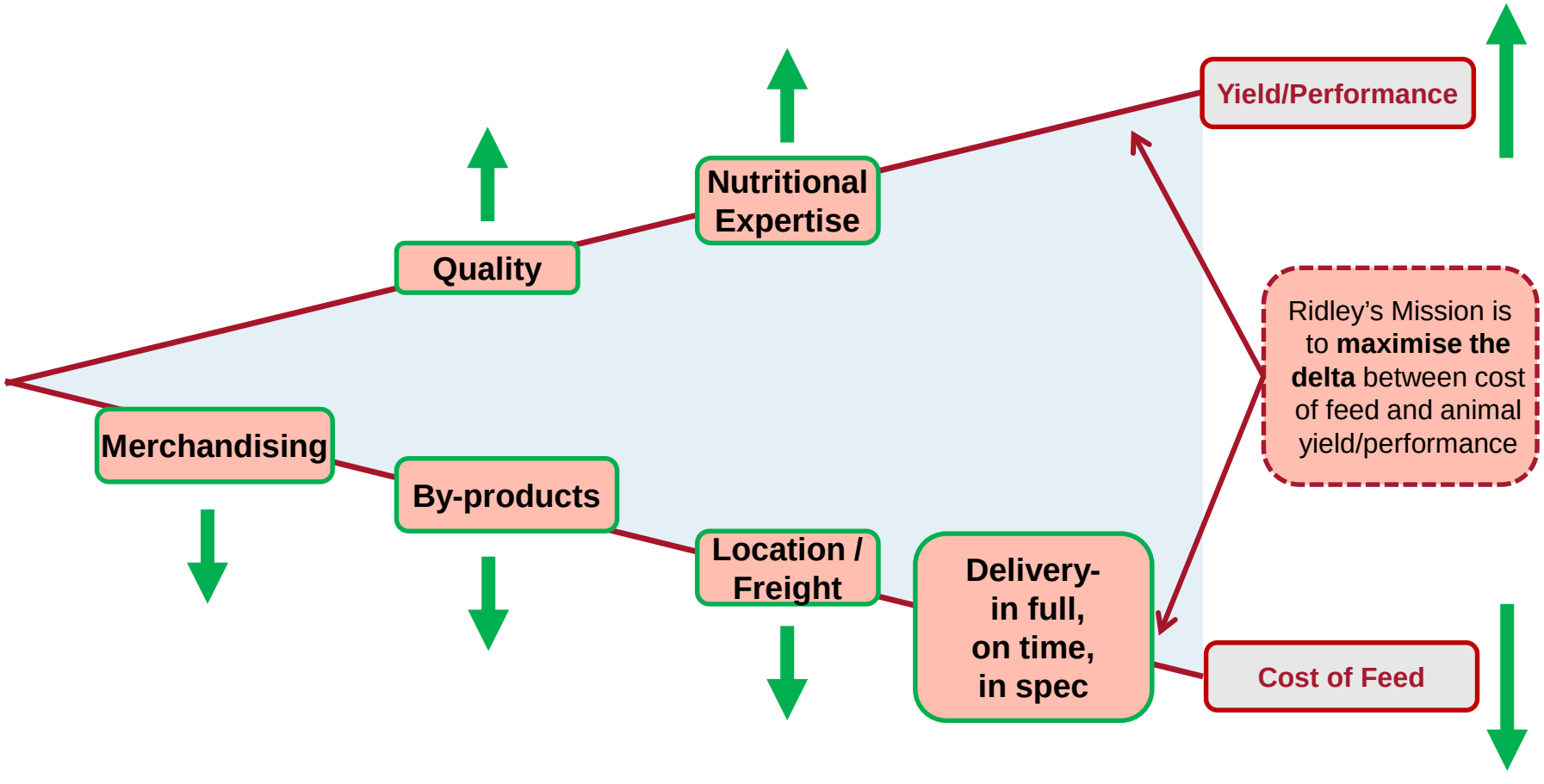
- Vast reserves of conventional gas
- Maturing coal seam gas industry
- $200bn worth of energy infrastructure under construction and due to come onstream in 2017
- World's 7th highest amount of technically recoverable shale gas

Sources: *World Bank, ABARES, Deloitte Access Economics*

RIDLEY STRATEGIC PLATFORM

Ridley recognised as a valued citizen which nourishes and sustains the community

"Our Mission is to improve the cost of feed to yield ratio for our customers"



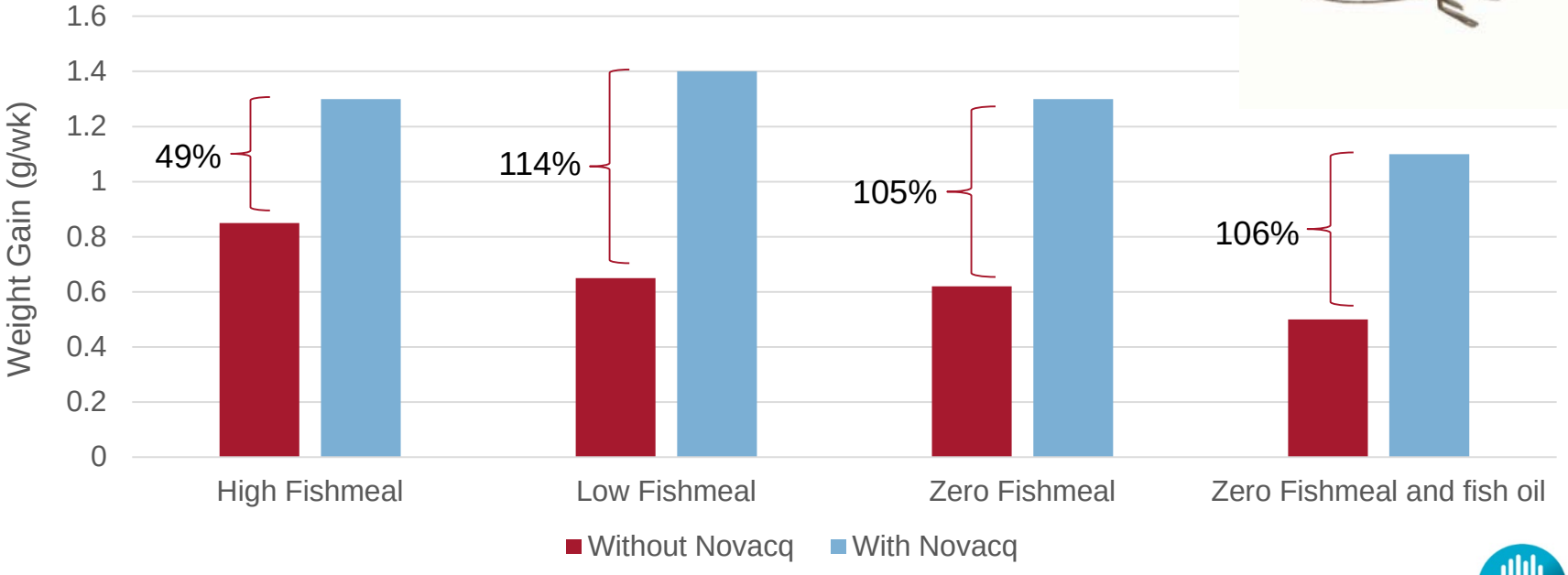
RIDLEY CASE STUDIES:

1. NOVACQ™
2. RENDERING

CASE STUDY 1: NOVACQ™

What is Novacq™?

- Novacq™ is a natural bioactive molecule
- Improves both growth rate & feeding efficiency in crustaceans
- Produced in an environmentally friendly & sustainable manner
- Potential to eliminate dependence on fishmeal & fish oil



CASE STUDY 2: RENDERING INDUSTRY

The Ultimate Recycler?

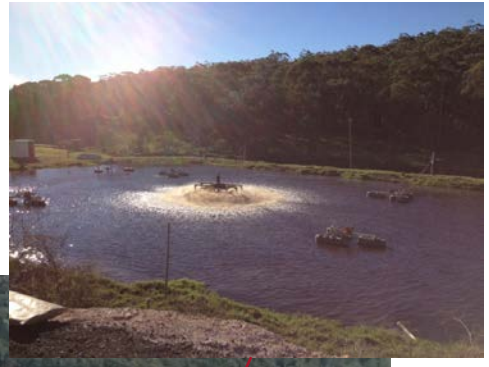
- Stock & Pet Feed Ingredient
  - Protein Source
  - Fats as an Energy Source
- Aquaculture Feed Ingredient
- Edible tallows for food manufacture
- Oleochemical industry
  - Soaps, detergents & allied products
- Lubricants & mould release agent
- Biodiesel manufacture
- Fertiliser ingredient

CSF Proteins Melbourne Rendering Plant

Water Bioremediation – A Sustainable Solution

CSF Proteins – Maroota

- Anaerobic Water Management System
- Two covered anaerobic ponds & cooling ponds
  - No water is purchased
  - All water is recycled on site
  - 100% self-sufficient; closed-loop recycling scheme
- Methane generated as a by-product
  - Gas production operates boiler for the generation of steam
  - 100% self-sufficient



Concluding remarks…….

1. Increasing global demand
2. Cost of Feed to Yield Ratio
3. No silver bullet; multi-pronged approach

People

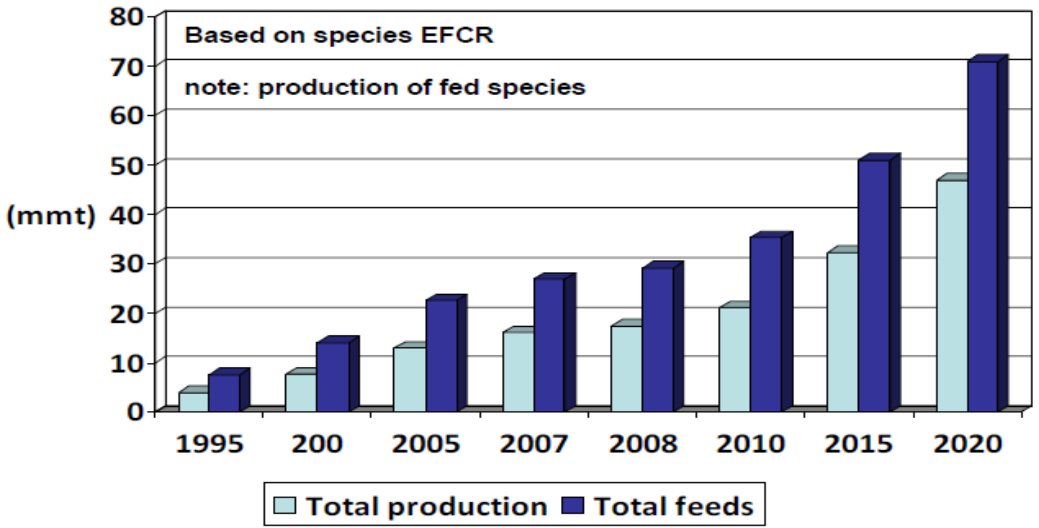
Profit

Planet

THANK YOU

Fastest-growing sector overseas and at home…….

Global Compound Aquafeed Forecast to 2020



Source: *FAO Fisheries & Aquaculture Technical Paper 564*

Some Facts & Figures

- **Asia** is home to ~90% of global aquaculture production
- Farmed fish expected to exceed wild catch by **2018**

Source: *FAO Fisheries & Aqua Department 2013*

- **Australia's** aquaculture industry, whilst comparatively small, has grown at a CAGR of ~11% over the last 20 years
- The two major growers are both investing in new farms and biomass to continue growth

Source: *Department of Agriculture, Australia's Seafood Trade, October 2013*

Constraint:
• declining wild catch also means less raw material for farmed fish feed

Solution:
• novel raw material inputs, including terrestrial animals

“NOCATCH™” PRAWN DIET

FISHMEAL-FREE DIET WITH EQUIVALENT HIGH PERFORMANCE