



Australian Export Grains Innovation Centre

Maximising the value of Australian grain

# Accessing health benefits of oats in our daily diets

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Department of  
Primary Industries and  
Regional Development



AEGIC is an initiative of the Western Australian State Government and Grains Australia



# Key points

Health issues such as diabetes and heart disease are increasing in Asia

Australian oats are high quality, clean and very healthy

AEGIC product innovation will help consumers eat more oats



Honeycomb cake (Bika Ambon)  
with oats

# Overview

Australian oats  
are well  
positioned to meet  
future demand

Oat products in  
Asia

Barriers for oat  
product growth

Opportunities to  
include more  
healthy oats in  
diet

# Australian oats are well positioned to meet future demand

Oat markets expected to grow globally

Australia is a high-quality producer of feed and food grade oats

Australia is the second largest oat exporter, Western Australia (WA) is the main exporting state

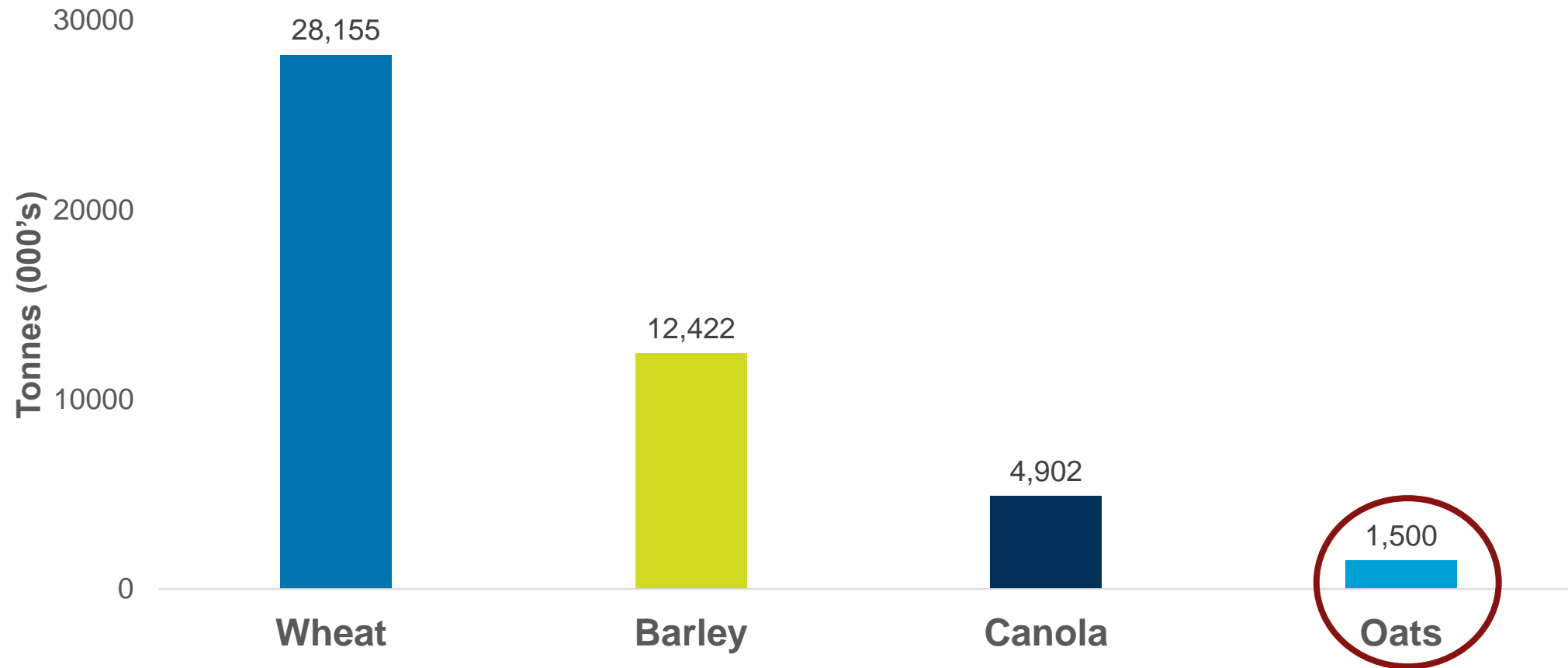
Opportunities to improve consumers health

Increased WA state government investment into oats



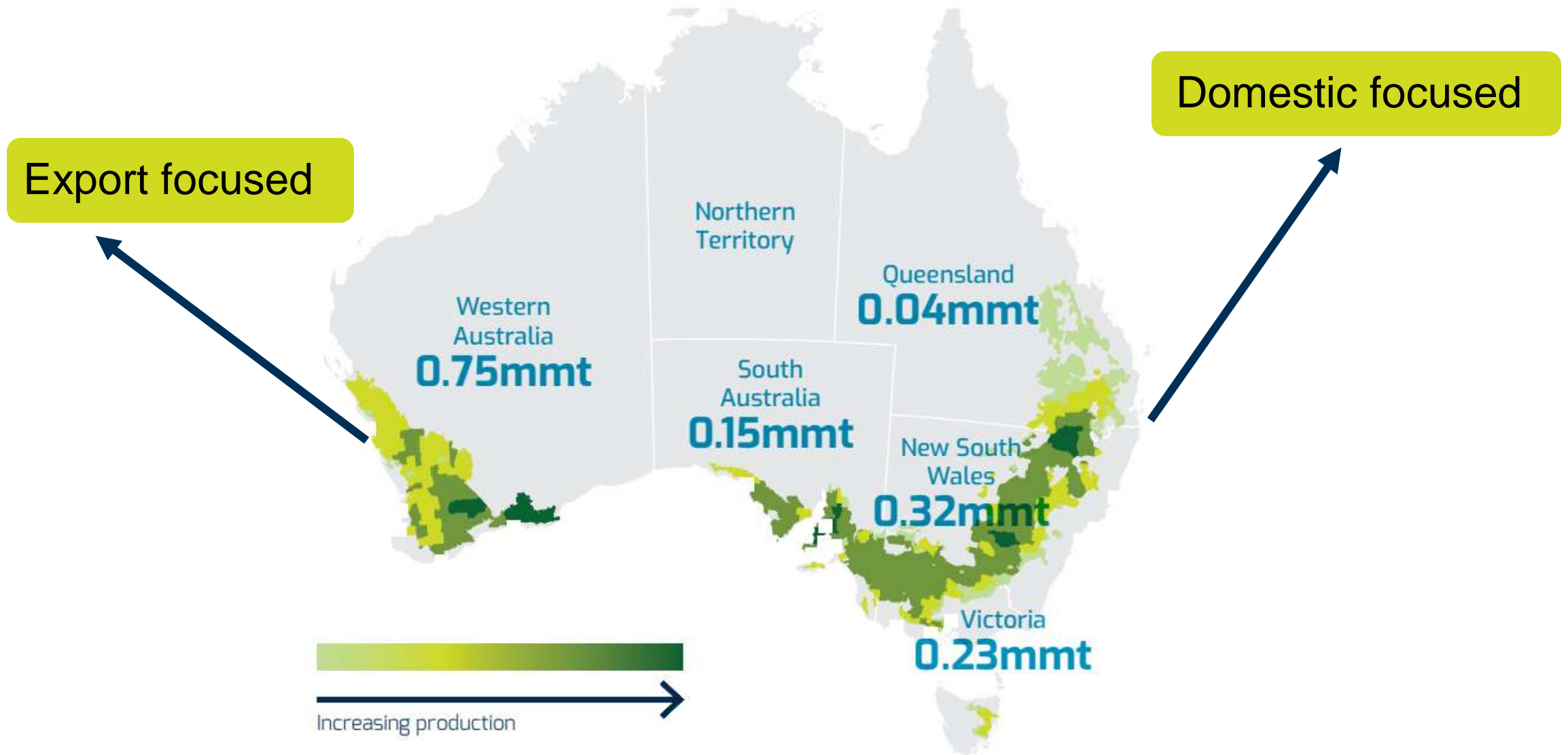
# Australian oat production

Five-year average to 2022-23



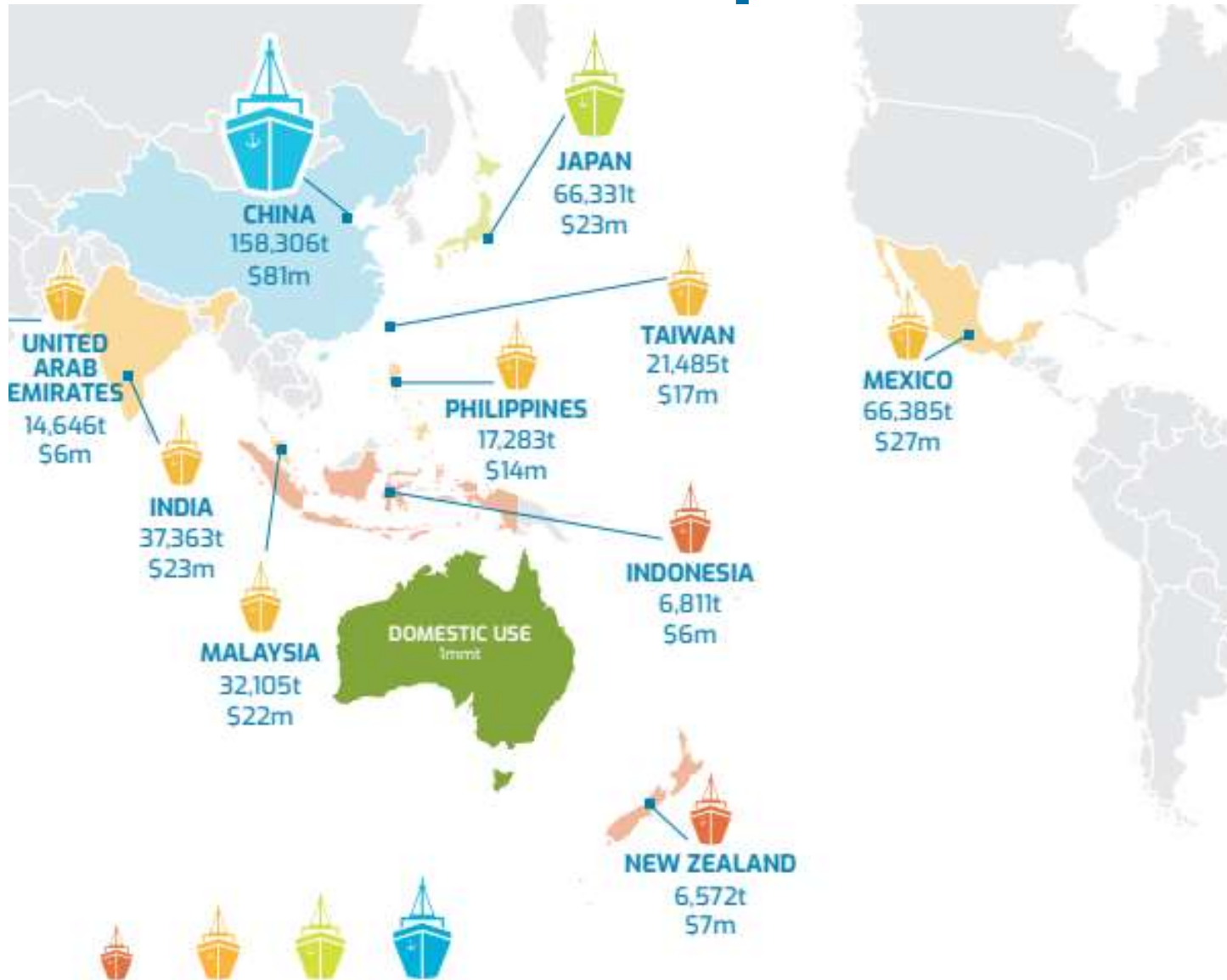
Source: ABARES

# Australian oat processing



Source: ABARES five years average to 2022-23

# Australian oat export markets



Sources: ABS Australian Bureau of Statistics  
 ABARES Australian Bureau of Agricultural and Resource Economics and Sciences  
 FAO Food and Agriculture Organisation of the United Nations  
 UNCOMTRADE United Nations Commodity Trade Database

Total average exports

\$223m 407,607t

Average annual raw oat exports

\$98m 268,975t

Average annual processed oat exports

\$125m 138,632t

Market	Volume	Value
China	37%	36%
Mexico	16%	12%
Japan	16%	10%
India	9%	10%
Malaysia	8%	10%
Taiwan	5%	8%
Philippines	4%	6%
UAE	3%	3%
Indonesia	2%	3%
NZ	2%	3%

# Quality of Australian milling oats

Highly regarded by international markets:

Low moisture

Bright colour

Plump grains

Free from pests and contamination

Good nutrition

Excellent taste and aroma

Quality parameter	Average range
Moisture (%)	9-10.5
Grain brightness (Minolta CIEL*)	56-65
Hectolitre weight (kg/hl)	51-56
Groat (%)	70-78
Beta-glucan (%)	4.5-5.5



Source: © 2022 – Government of Western Australia



# Products with Australian oats in Indonesia



Oatmeal and instant oats



Oat clusters



Oat milk



Oat biscuits

# Asian oat products

## Established market: flaked oats



Source: © 2022 – William Reed Ltd.



Source: © 2022 · Omnivore's Cookbook



## Developing and growing market: new/innovative oat products



Source: China Daily Information Co © 1995-2022

### Oat noodles



### Oat rice



Source: © Dotdash Media, Inc. 2022

### Oat milk



Source: AB Newswire 2022 © 2012-2022

### Oat bars

# Prevalence of health burden

By 2030, global death due to lifestyle disease is expected to increase to 70%

In 2021, globally 529 million people were diabetic



Globally, 19 million died due to CVD in 2022

© Muniyal Ayurveda 2017

# Oats are a health superfood

Growing lifestyle diseases

3g of  $\beta$ -glucan per day improves health

Control blood sugar level

Control obesity



Lower blood cholesterol

Anti-cancer properties

Source: © 2003-2022 Shutterstock, Inc

Prebiotic effect

Vehicle to reduce health burden

# Other nutritional aspects of oats

Nutrients (Uncooked)	Food Standards Australia New Zealand (FSANZ) Food Database				
	Oat Flake	White Rice	Brown Rice	Pearled Barley	Whole Grain Wheat
Protein (%)	12.3	7.6	8.3	10.1	11.6
Carbohydrate (Available) (%)	50	77	73	61	59
Fat (%)	9.4	0.9	3.3	3.1	2.4
Total Dietary Fibre (%)	9.4	0.8	3.7	13.1	11.5
Vitamin B1 (mg/100g)	0.4	0.1	0.4	0.2	0.5
calcium (mg/100g)	40	4.2	7.3	28	35
Iron (mg/100g)	3.5	0.2	0.8	2.2	3.4
Sodium (mg/100g)	3	1	2.1	10	2



© The Quaker oats company



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*Nutrients value calculated at same moisture content of 9.8% of uncooked grain products*

# Accessing health benefits of oats: AEGIC research

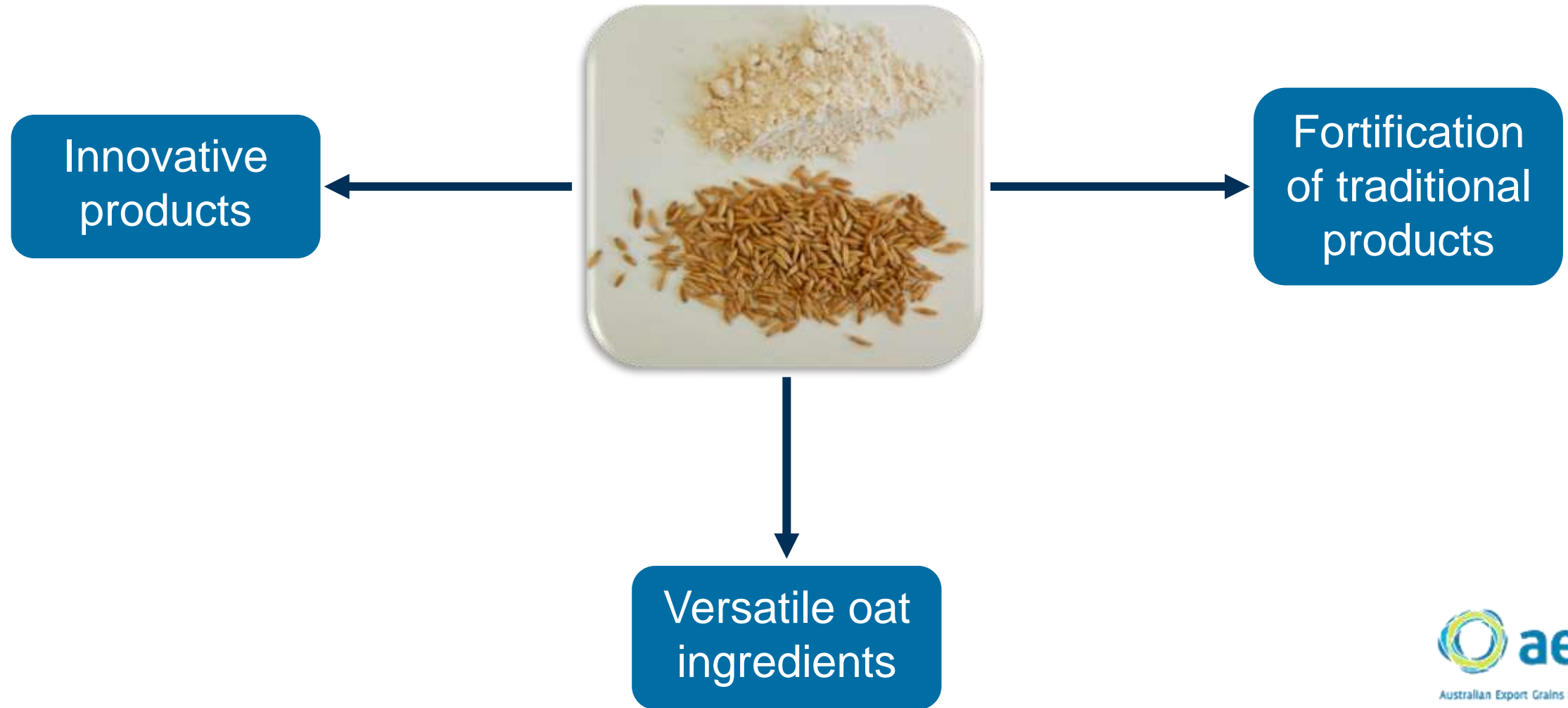
Nutritious oats



AEGIC's research



More oat food options



# AEGIC's oats innovation

Move oats beyond breakfast to a go-to option for lunch and dinner



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**Asian rice and noodles dishes**



**AEGIC oat rice and oat noodles**

# AEGLIC's oat noodle research



Australian oats



Chinese oats



# AEGIC 100% whole grain oat noodles

Innovative technology



No additives

Optimum processing

# Oat rice

Processed by removing the outer bran layer (pearling)

AEGIC oat rice research

Benchmarking between Australian and Chinese oat varieties

AEGIC developed an improved processing method



# AEGIC oat rice processing

Improves pearling efficiency

Improves shelf life

Preserves the beta-glucan content

Process has been optimised

Versatile uses in rice dishes



Nutrients (Uncooked)	Total Dietary Fibre (%)
AEGIC Oat Rice	8
White Rice	0.8
Brown Rice	4



**AEGIC processing loss**



**Commercial processing loss**

# AEGIC oats innovation



**AEGIC 100% wholemeal oat noodles**



Copyright © Inmagine Lab Pty Ltd 2022

**Impact of Australian oat varieties**



**AEGIC oat rice**



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**Commercialisation**

# Versatile oat ingredients



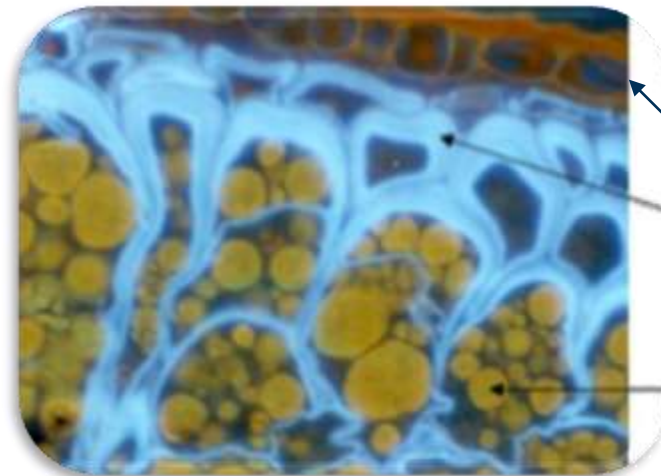
Outer bran layer



Beta-glucan rich fraction



Semolina



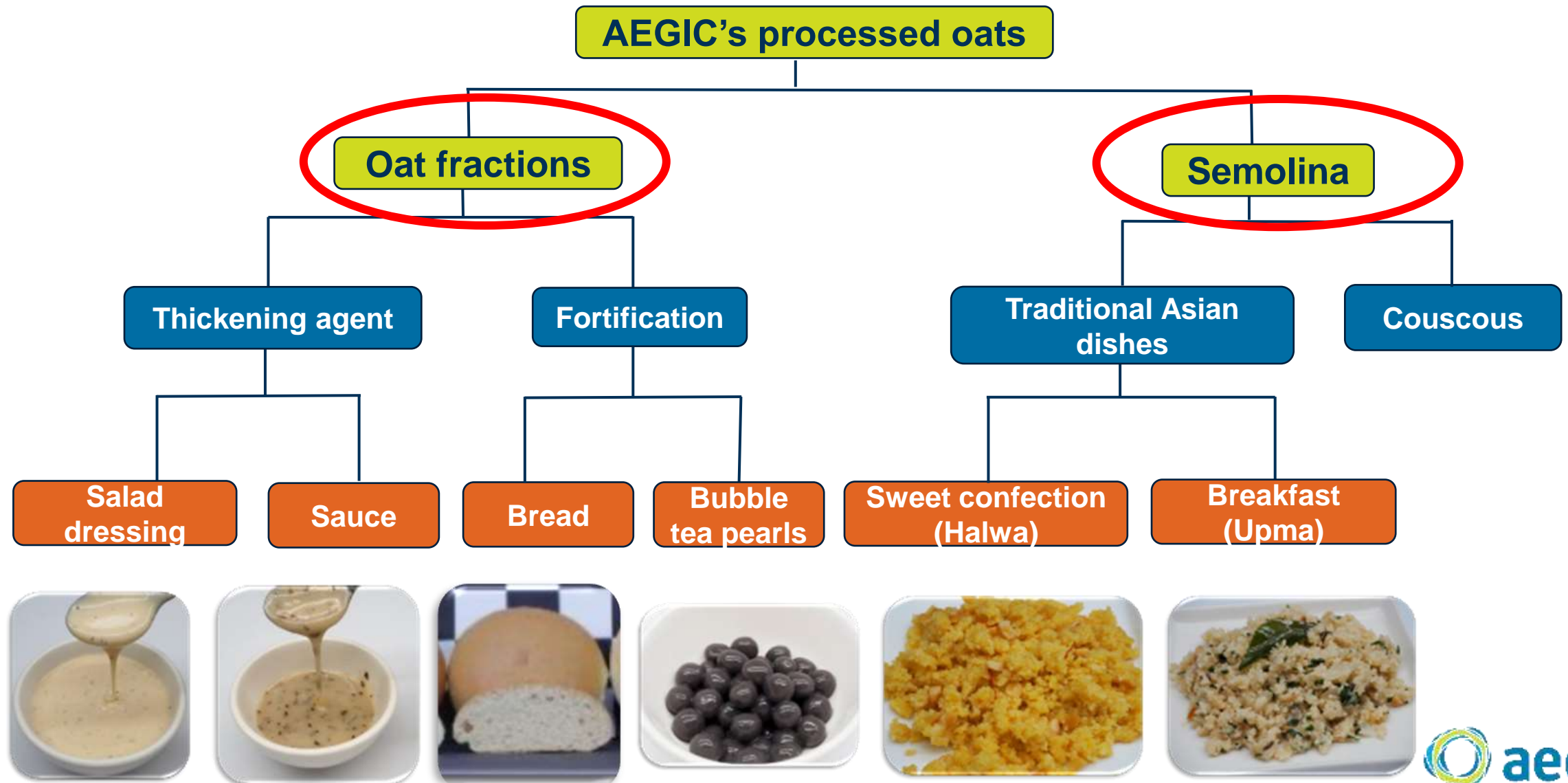
Outer bran layer

Beta-glucan rich fraction

Starch

Olson et al 2012

# Application of versatile oat ingredients



# Fortification of traditional Asian foods with oats

## Asian traditional food



Indian Snacks Recipes - 216 Evening Snacks (indianhealthyrecipes.com)

Waroeng Mami Jeanne | Figma Community

## Oat flour



Waroeng Mami Jeanne | Figma Community



↓ Carbohydrate

↑ High protein

↑ Dietary fibre

↑ Beta-glucan



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# Oat fortified Indonesian foods at AEGIC



**Honeycomb cake  
(Bika Ambon)**



**Layered cake  
(Kui Lapis)**



# Future work

**Innovation**

**Commercialisation**

**Market engagement and collaboration**

**Strengthening Australia's oat classification system**

**Building market insights on global oat opportunities**



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# Summary

Australian oats and oat products are well positioned to meet the growing health-conscious markets of Asia

Innovation will continue to support oat growth in food markets

AEGIC welcomes collaboration with industry to achieve practical outcomes for the entire value chain



Australian Export Grains Innovation Centre

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[aegic.org.au](http://aegic.org.au)



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