



Lincoln University

Te Whare Wānaka o Aoraki

AOTEAROA • NEW ZEALAND

New Zealand's specialist land-based university

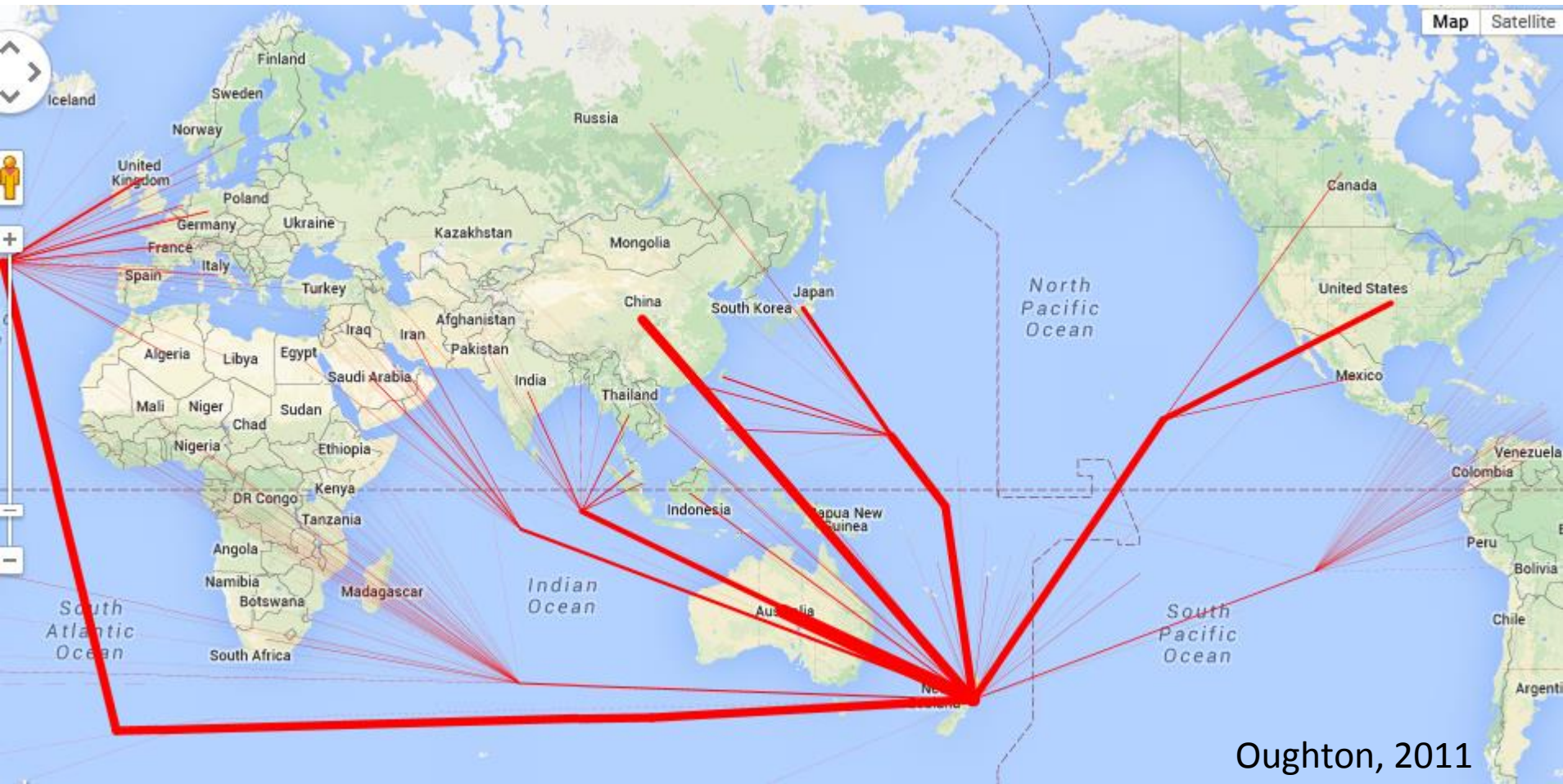


The Livestock Chain in New Zealand

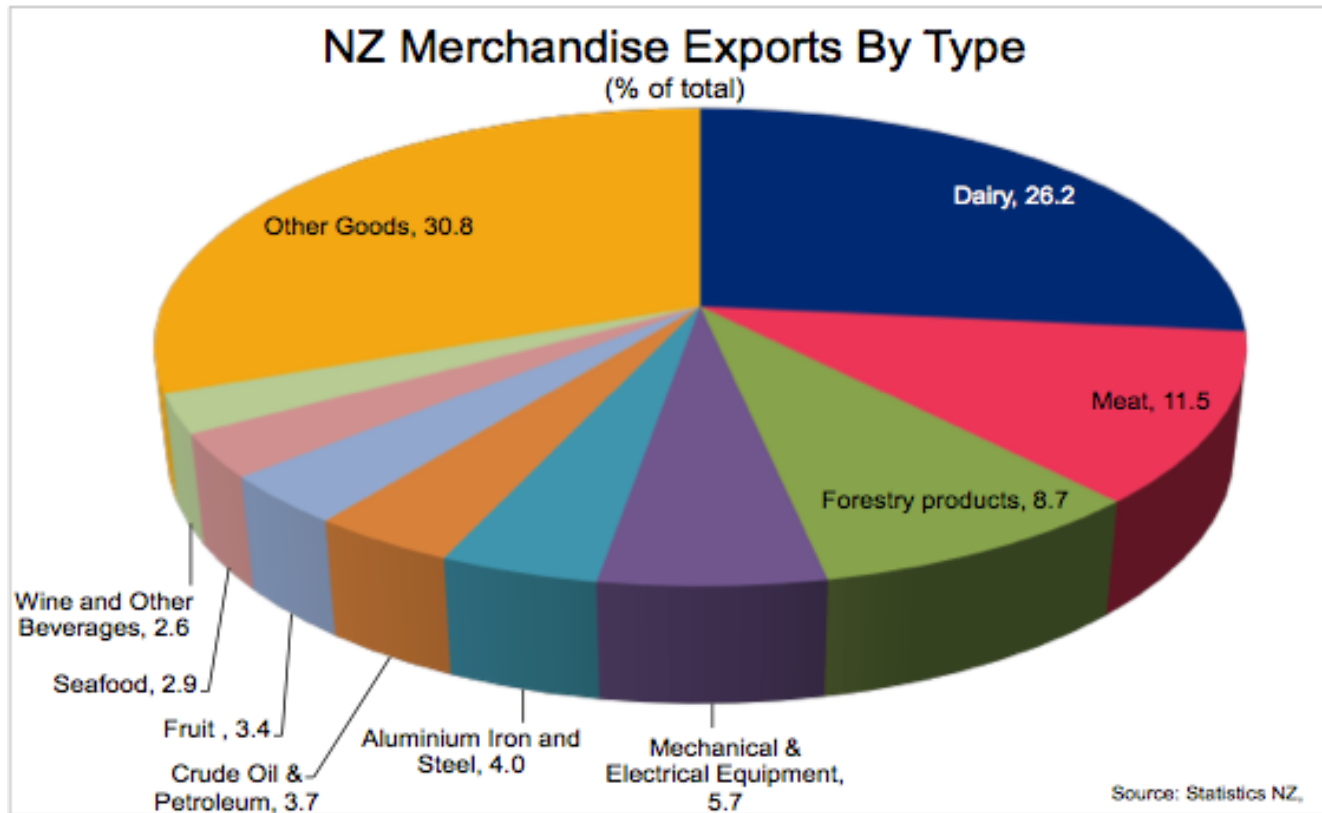
A pastoral economy reliant on exports

Jim Morton

New Zealand Exports 2011



Dairy and Meat Dominate NZ Exports



Top commodities by value

	Commodity	Value [1000 Int\$]
1	Milk, whole fresh cow	6242156
2	Meat indigenous, cattle	1640532
3	Meat indigenous, sheep	1217914
4	Wool, greasy	315664
5	Kiwi fruit	307026
6	Meat indigenous, chicken	244302
7	Grapes	194350
8	Apples	189465
9	Potatoes	80846
10	Meat indigenous, pig	76573

Source: FAOSTAT, FAO of the UN, Accessed on February 4, 2015. <http://faostat.fao.org/site/612/default.aspx#ancor>

Dairy and Meat Dominate NZ Exports

1 *Whole Milk Powder*

2 **Sheep Meat**

3 *Butter*

4 **Beef**

5 *Skimmed Milk powder*

6 *Kiwifruit*

7 *Cheese*

8 *Wine*

9 *Food Ingredients*

10 *Milk Products*

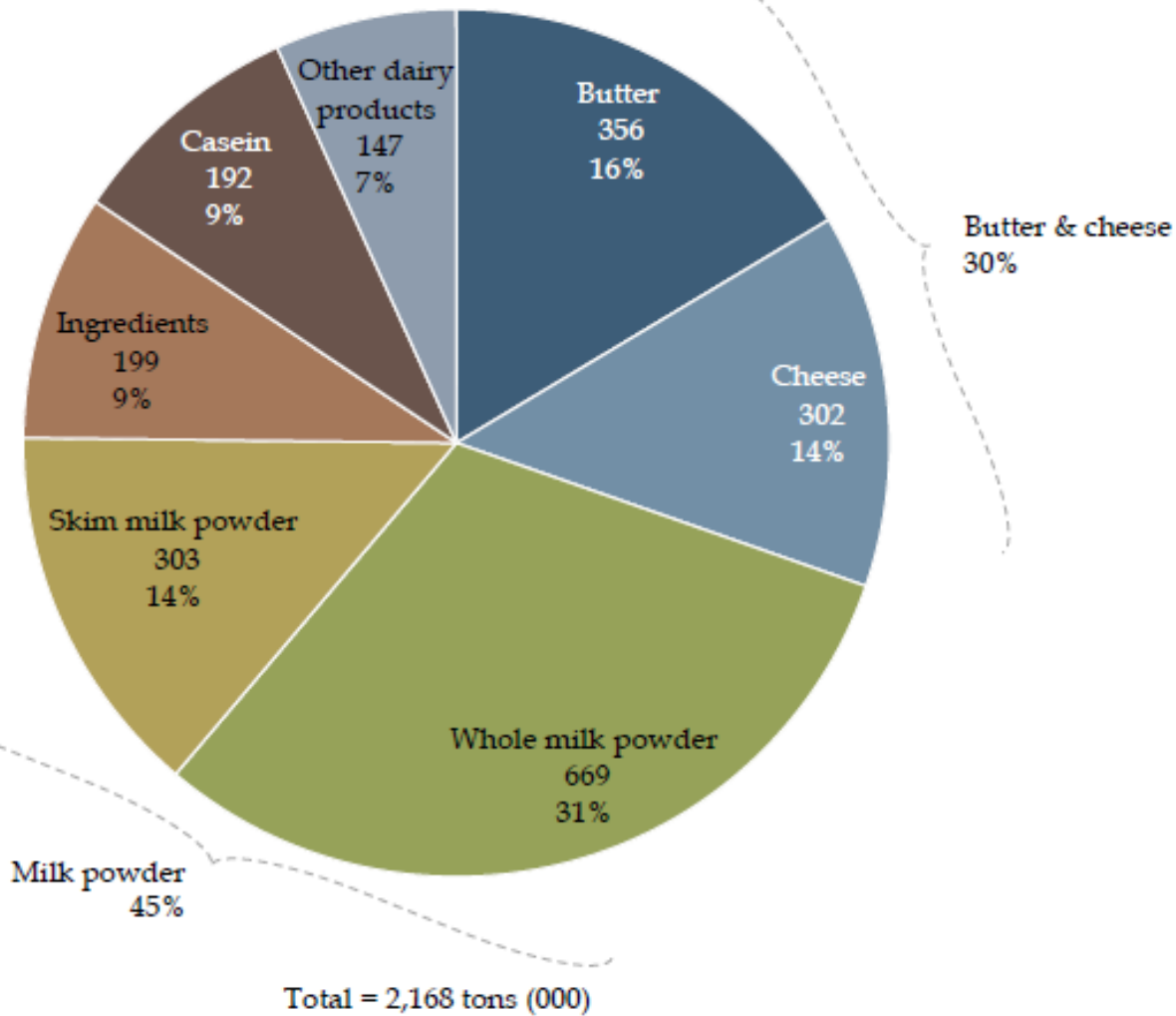
(FAO, 2013)

Dairy

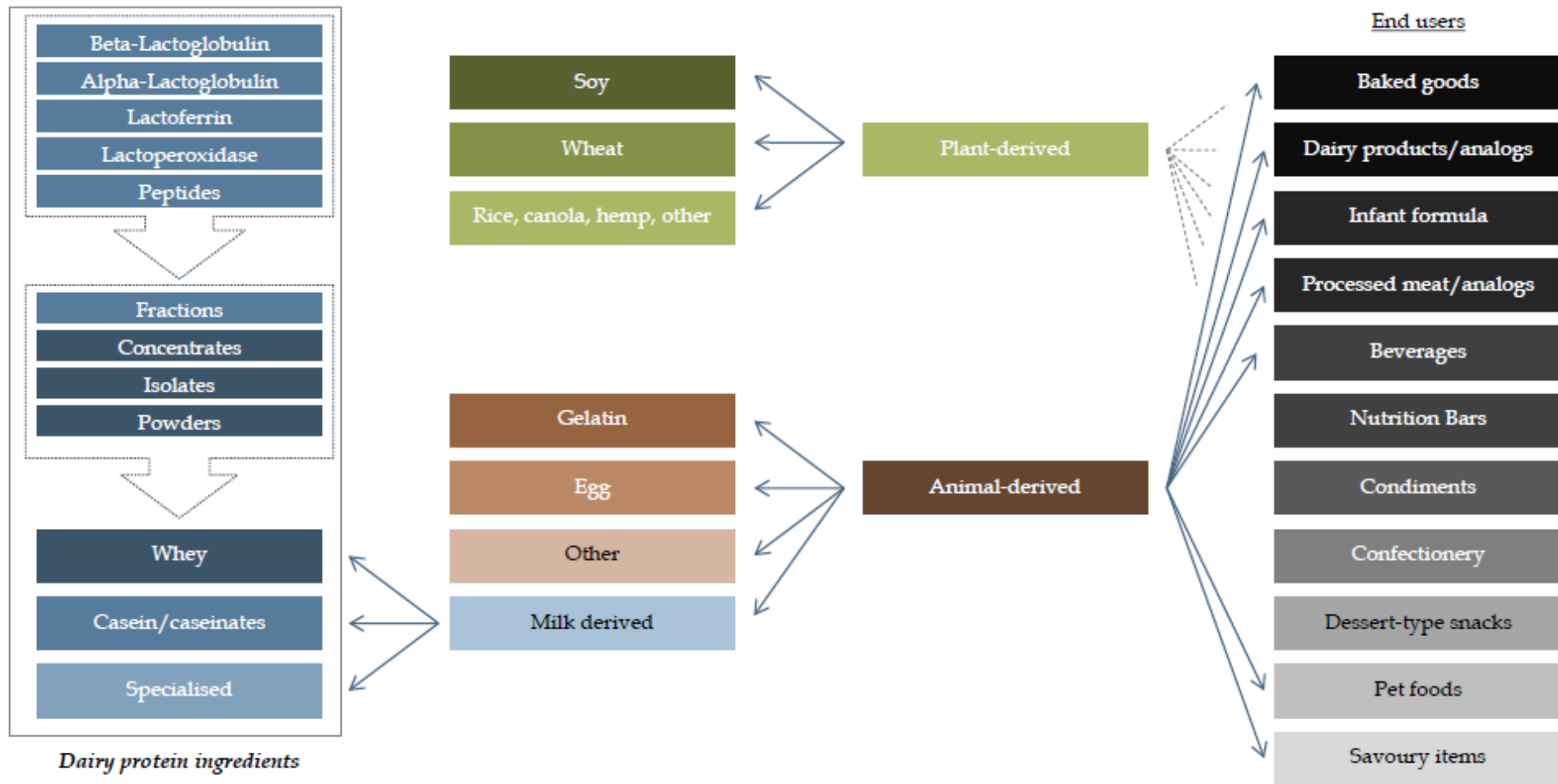
- Largest industry
- 30% of exports
- 95% of milk is processed and exported
- Fonterra (cooperative) largest (88%)
- Milk powder, butter and cheese
- Whey fraction now also valuable
- (\$15 million 2002, \$601 million 2012)

(Coriolis, 2014)

Dairy Exports



Protein Ingredients



Red Meat

- Second most important export
- 31 million sheep, 10 million cattle and 1 million deer in 2013.
- Change from production to quality focus



Diverse Exports

Exports 2013

\$billion

Sheep 3.0

Beef 2.2

Coproducts 1.4

MIA, 2014



Meat Industry

- Four companies make up 75% of processing.

Silver Fern Farms

ANZCo

Alliance

AFFCO

Almost all exported

- 92% lamb.
- 82% beef
- 95% venison

- Large contribution to beef from dairy herd

Trends

- From frozen carcasses to primal cuts to specific products.
- Beef usually boneless, lamb often bone in.
- Trimming of carcasses can leave waste
- Remaining meat scraps can end up as pet food
- Scraps and bones rendered to meal

Trimming

- Carcass is dressed to remove tissues some of which could be food
- This is rendered to meal and tallow (fat)
- Less fat now that schedule favours large lean animals

Bovine Industry Agreed Trimming Criteria.

Trimming is limited to:		Notes
1	Cod/Udder, testes or penis	Total removal ensuring flank remains in situ.
2	Fat on Ventral Abdomen Including precrucial fat.	Total removal ensuring no meat or muscle is exposed or removed and limited to the level of the 12th rib.
3	Skirts –Thick and Thin	Total removal
4	Xiphoid cartilage	Total removal
5	Brisket	Excess fat off. Ensure no meat or muscle is exposed.
6	Intra-thoracic Fat	Total removal

Opportunity with Disease-Free Status Bioactives

Taranaki Bio Extracts Ltd

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**NATURAL INGREDIENTS AND PRODUCTS
MADE FROM CLEAN AND SAFE NEW ZEALAND
BEEF AND BEEF BONE.**

CONTACT
TARANAKI BIO EXTRACTS for enquiries

PRODUCTS

Taranaki Bio Extracts manufactures a range of natural ingredients including: Beef Bone Extract, Dried Bone Chips

QUALITY ASSURANCE

All of Taranaki Bio Extracts' raw materials are sourced from New Zealand's clean, green environment.

FOOD & SAFETY

New Zealand's Unrivaled Disease-Free Status

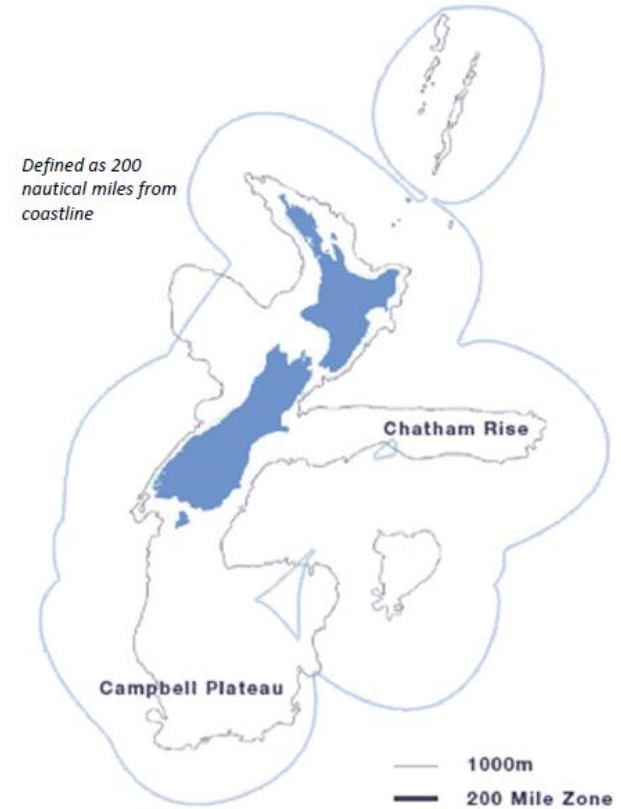
For bioproduction applications, it is essential to source serum secure countries with the lowest disease risk, such as New Zealand.

- Globally recognized as disease-free
- Geographic isolation – island nation
- Free of all OIE diseases
- GBR 1 status – lowest risk status for BSE and scrapie
- New Zealand has never had a case of BSE or CWD, and has been free since 1954
- Live cattle imports from the UK and other BSE-affected countries since 1988
- Cattle and sheep industries are primarily pastoral
- Strong regulatory position and controls (NZ MAF)
- Favorable regulatory review in licensing of biopharmaceuticals and biotherapeutics

Invitrogen, 2015

Wild Catch Fishing

- Sixth largest exclusive fishing area (EEZ).
- Sustainable fishery



Waste

- By-catch discarded in a quota system.
- Deep sea freezer trawlers processing at sea.
- Often only fillets kept.
- Research into bioactives from fish waste.

wine fining (Cfine)

skin care

Sea Dragon Marine Oils



Utilization of our fish is conservation of our fish.

Ever seen a pile of fish heads and fish frames rotting on a beach? Some find the smell and sight offensive, while others are offended at the disregard of our precious resources and environment, and some are horrified by the blatant waste of food.



I HAVE

I have free fish heads to give away



The vast majority of fish eaters in New Zealand eat only the fillets, meaning thousands of fish heads and frames are dumped at sea, on beaches, buried in the garden or simply end up in the trash. Most of the folk that discard the heads and frames will never be convinced of the joys of picking at a fish frame or sucking on a fish eye. How-ever there are thousands of Kiwis that would gladly take fresh fish heads and frames and feast on the sweet succulent meat.

The solution is simple, those that don't want their fish heads can give them to some one that does. Trouble is, people that don't eat fish heads often don't know the people that do. So that's why freefishheads.co.nz has been established, to bring kiwis together, make people happy and reduce waste.



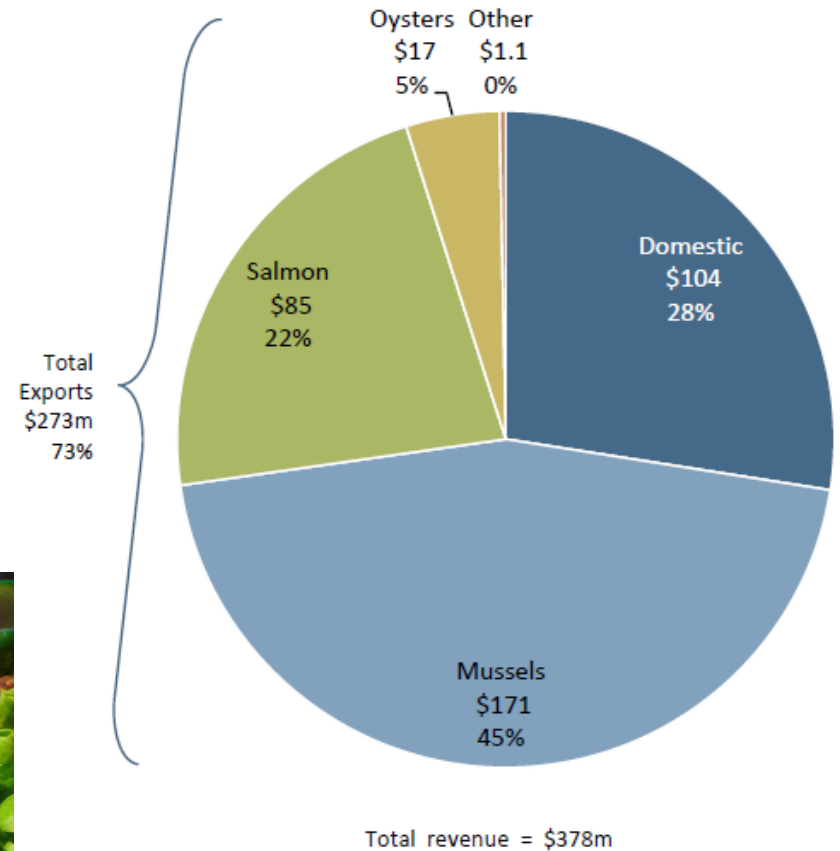
I WANT

I want some free fish heads

Aquaculture

King salmon

Green shell mussel



Waste

- Frames from salmon.
- Shells from mussels (mulch).
- Salmon feed with meal including feather meal from poultry.



Domestic Food Waste

- Food retail sector dominated by two supermarket chains.
- Limited number of food waste studies.
- Food waste to landfill estimated at 61.2kg per person per year.

(WasteNot Consulting, 2013)

Opportunities for Waste Reduction

- Red meat industry best combination of scale and low value products from waste.
- Potential from aquaculture