Missouri Dairy Grazing Conference

GRAZING AROUND THE WORLD

Michael Murphy

Dairy Producer

Ireland

By 2050

Estimated

NEED + 60% more food than now

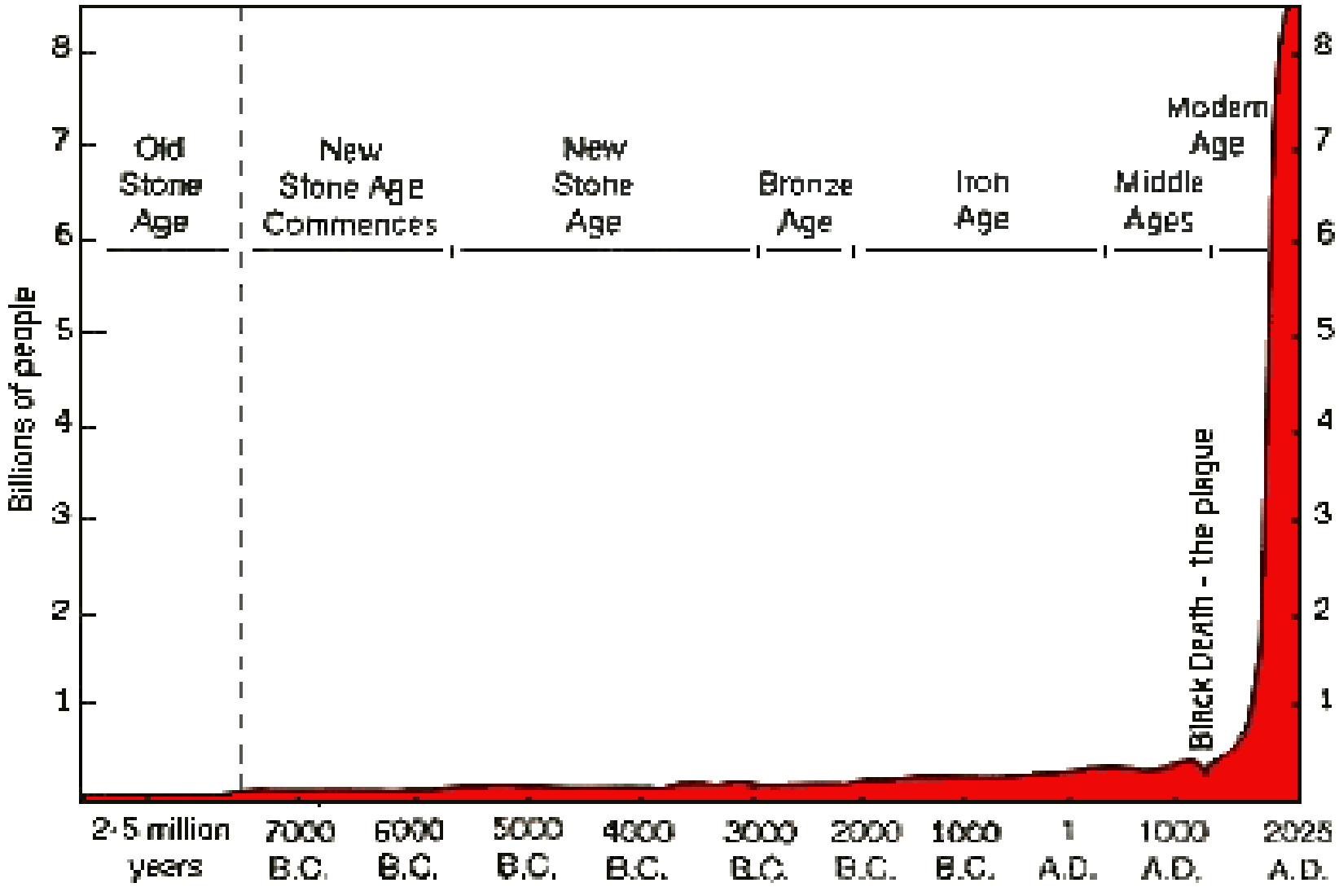
2009

Estimated 12 – 16% land very under-utilised

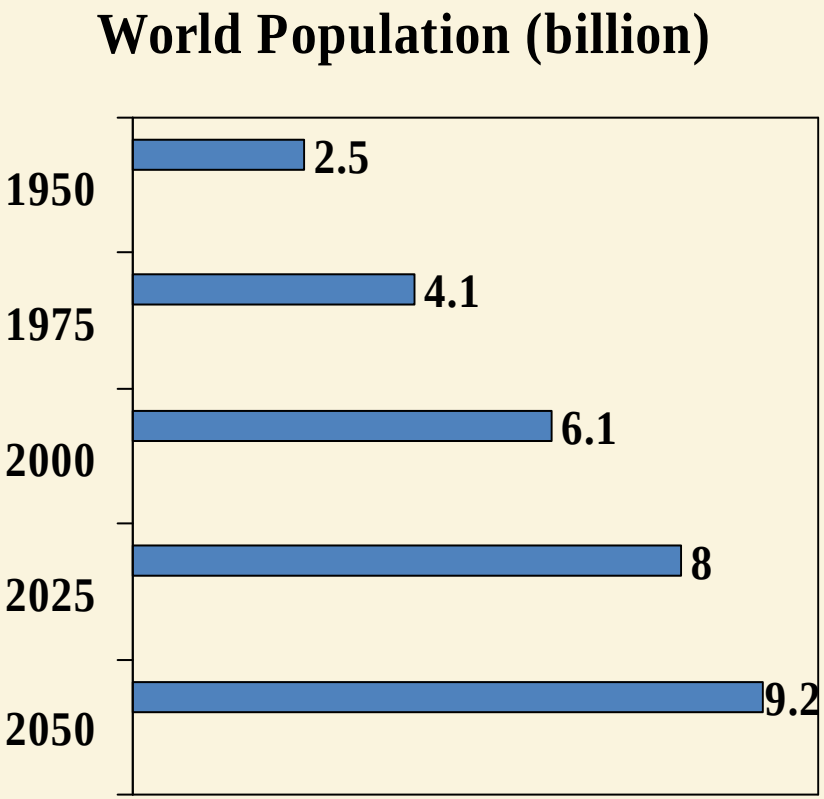
Will we produce +60% food?

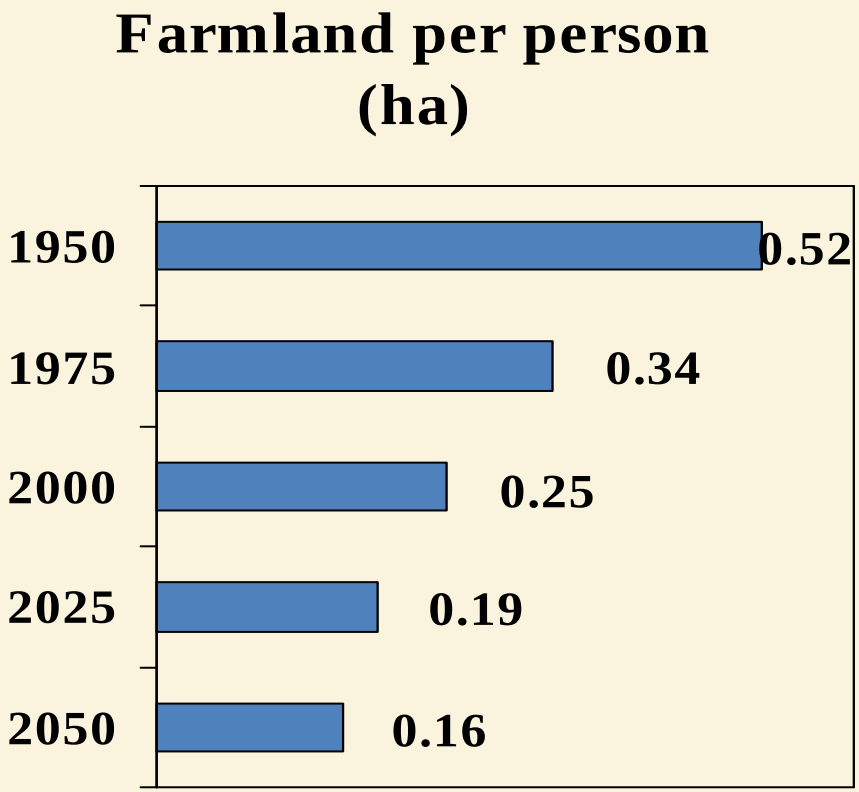
Excellent outlook for low cost farming

World Population Growth Through History



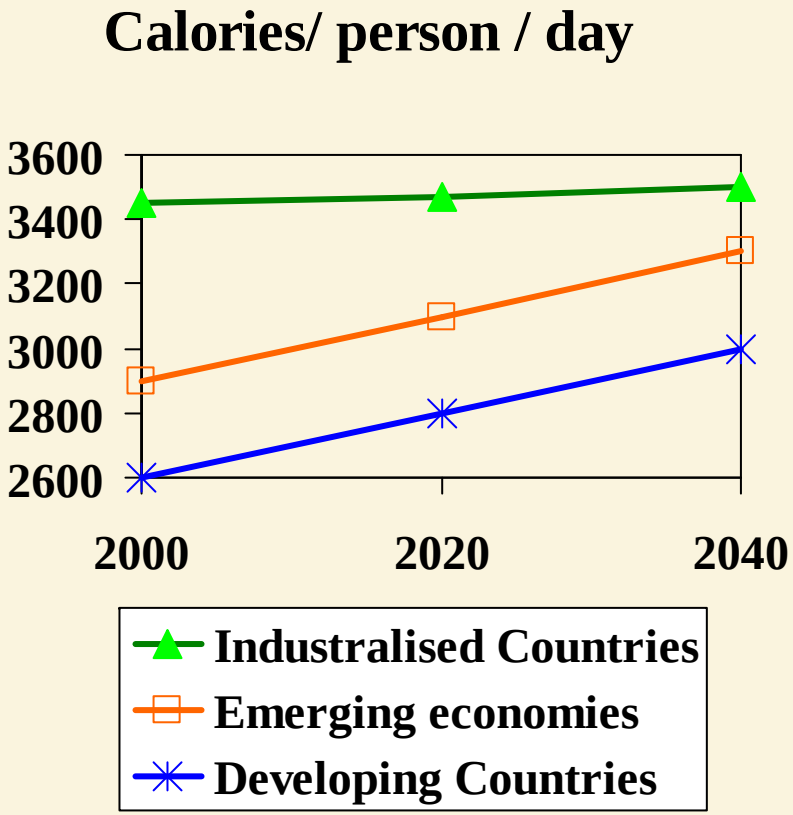
World Food Supply

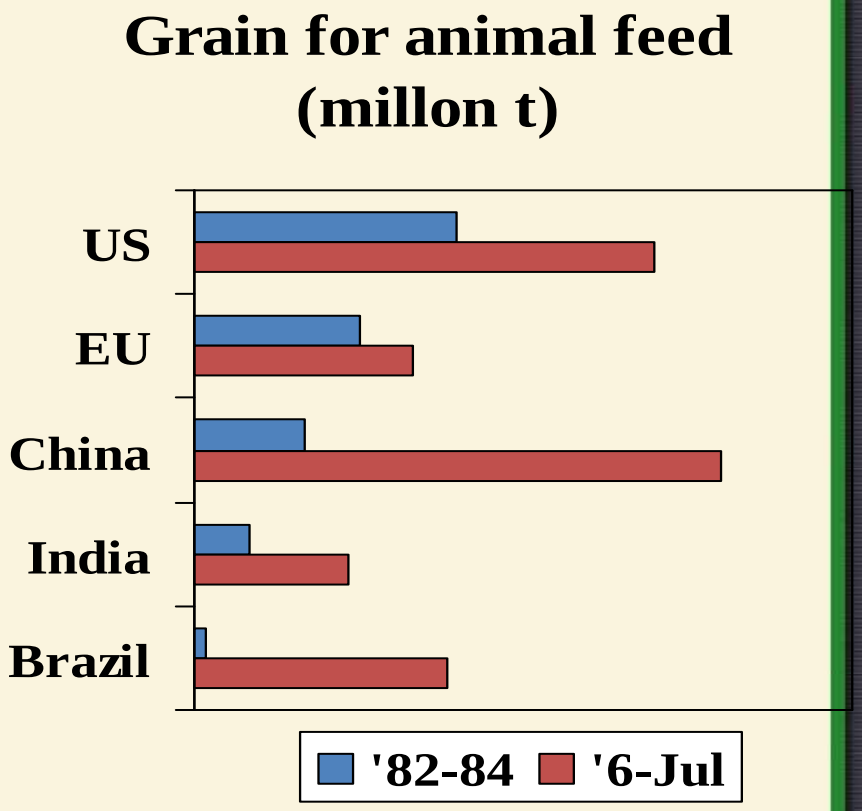




Farmland per person is decreasing rapidly as population increases

Impact of economic growth and prosperity on consumers





250 m tonnes MORE to animals now than 25 years ago

Land Use for Biofuel

- 2008 - 175 billion litres of oil
- 2015 - 350 billion litres of oil (IMF)
- Supermarket competing with forecourt as land use

Last 100 Years

Huge Growth in land productivity driven by

- Mechanisation
- Fertilisers
- Irrigation
- Weed Control

All above driven by cheap energy.

Is “cheap” energy almost history?

NOTE: Growth in land productivity is now much lower than earlier decades.

Water shortages into future?

- Major aquifers falling especially in Asia
- Retreating glaciers. Eg India and China
- North China very short of water
- 70% of crops irrigated in North China
- 60% yield drop without irrigation

Water – Melting Glaciers

- Himalayan e.g. Gangotri – supplies 70% of Ganges river dry season flow
  - Forecast to be largely melted by 2035
- China – Glaciers of Tibet Qinghai Plateau
  - Forecast to be 65% melted by 2060
- Huge reduction to dry season flow of Yellow & Yangtze rivers.
- China will be a huge grain importer within 5-10 years
- Cheap grain is nearly history

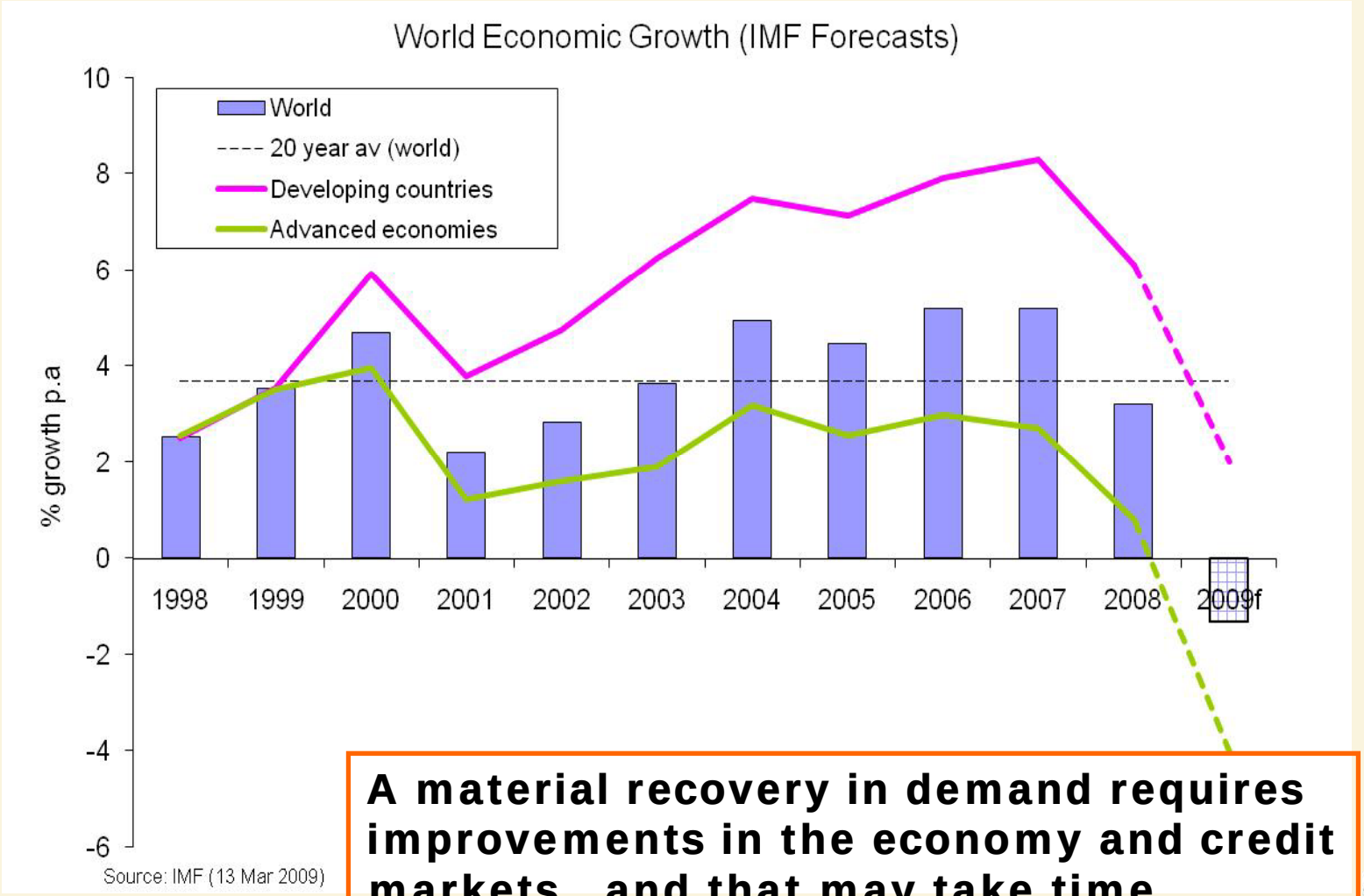
Dairy Market 2009

- Only 7% of world milk internationally traded
- USA 2000 – 2% of world trade in milk products
- USA 2008 – 12% of world trade in milk products

<u>Growth in Demand for Dairy Products</u>

- In West = in line with population
- In underdeveloped and developing countries = growth in GNP

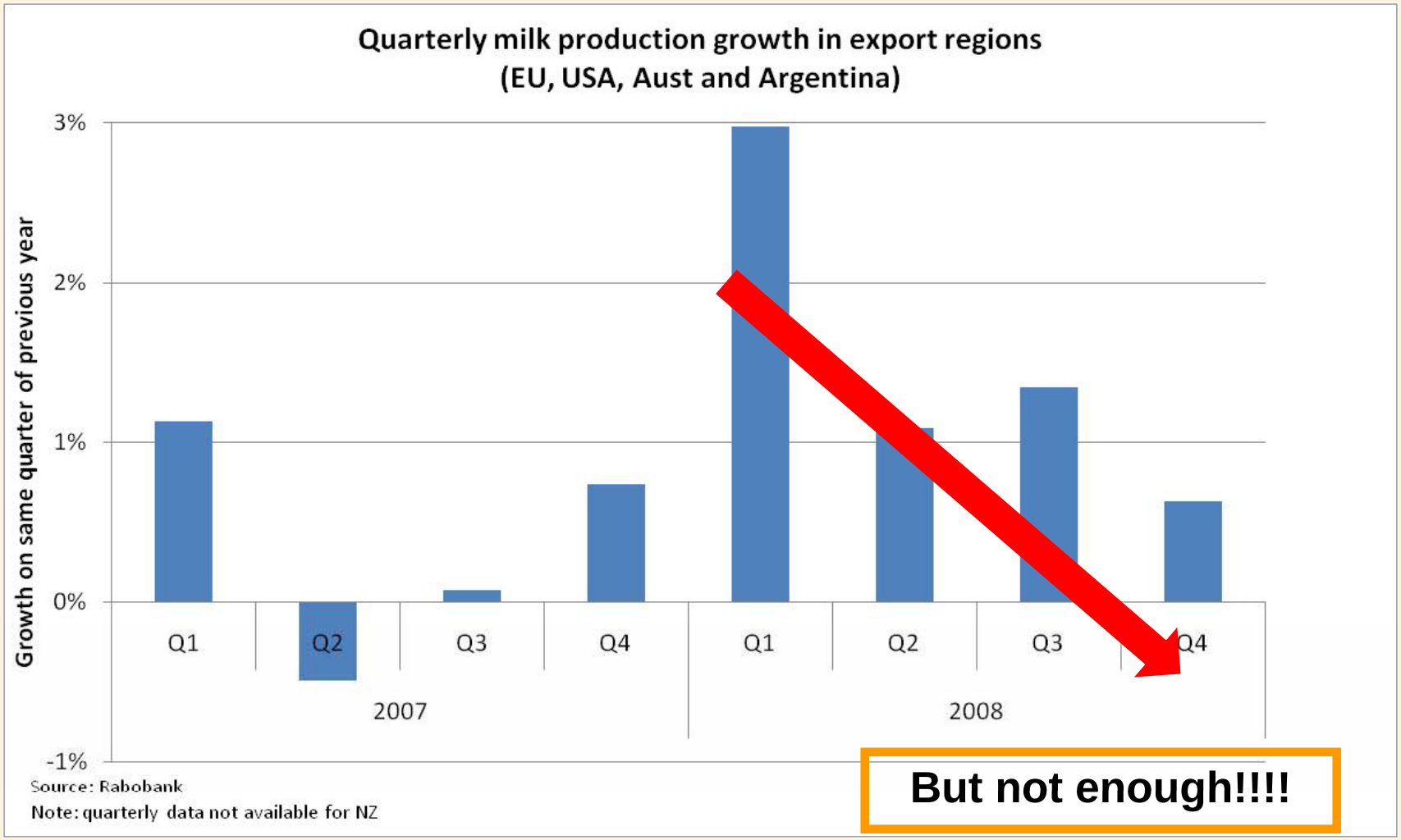
Global economy expected to contract



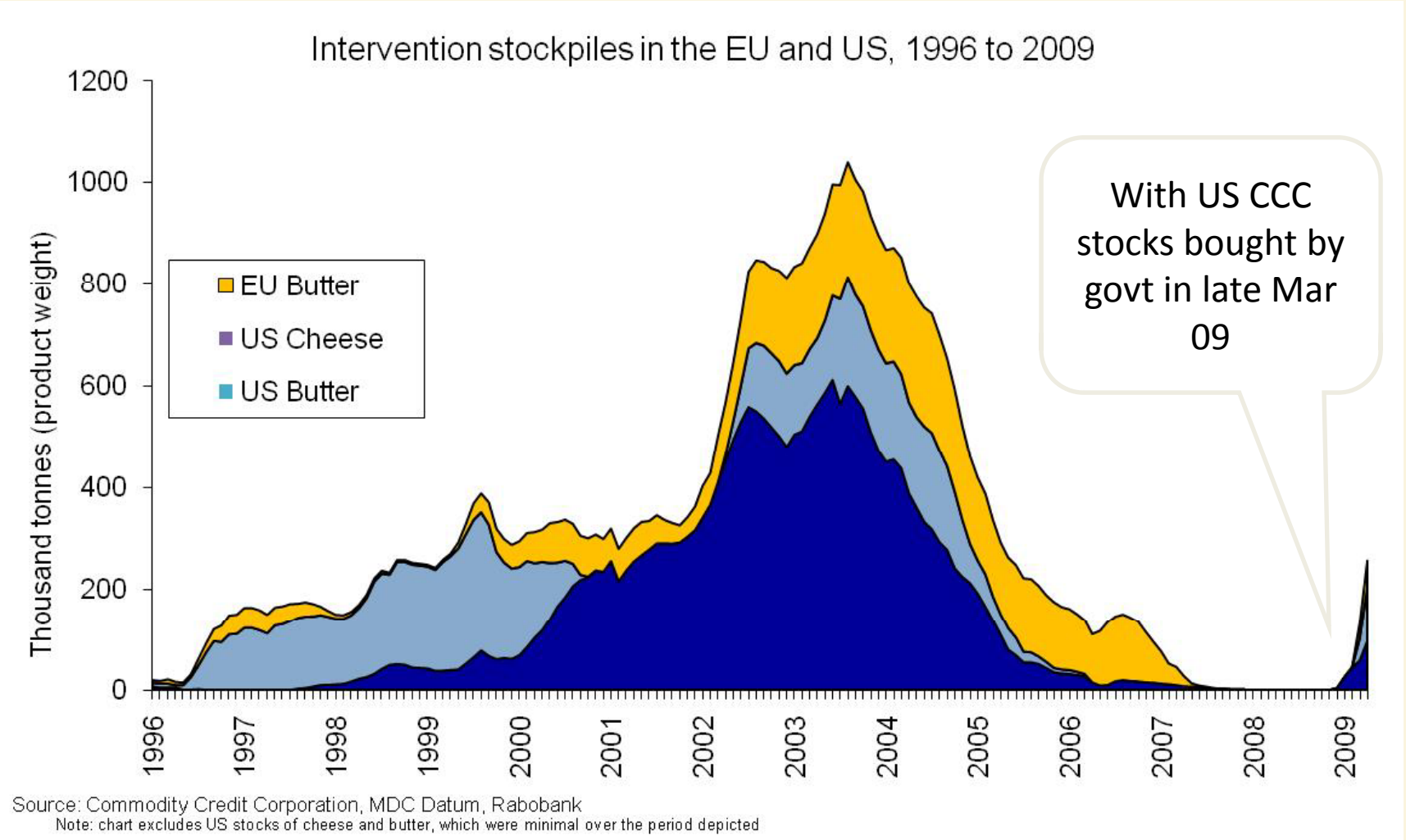
A material recovery in demand requires improvements in the economy and credit markets…and that may take time

Economic growth has collapsed

Supply growth has slowed



Stock have risen sharply, but remain well beyond historic peaks



Commodity Demand

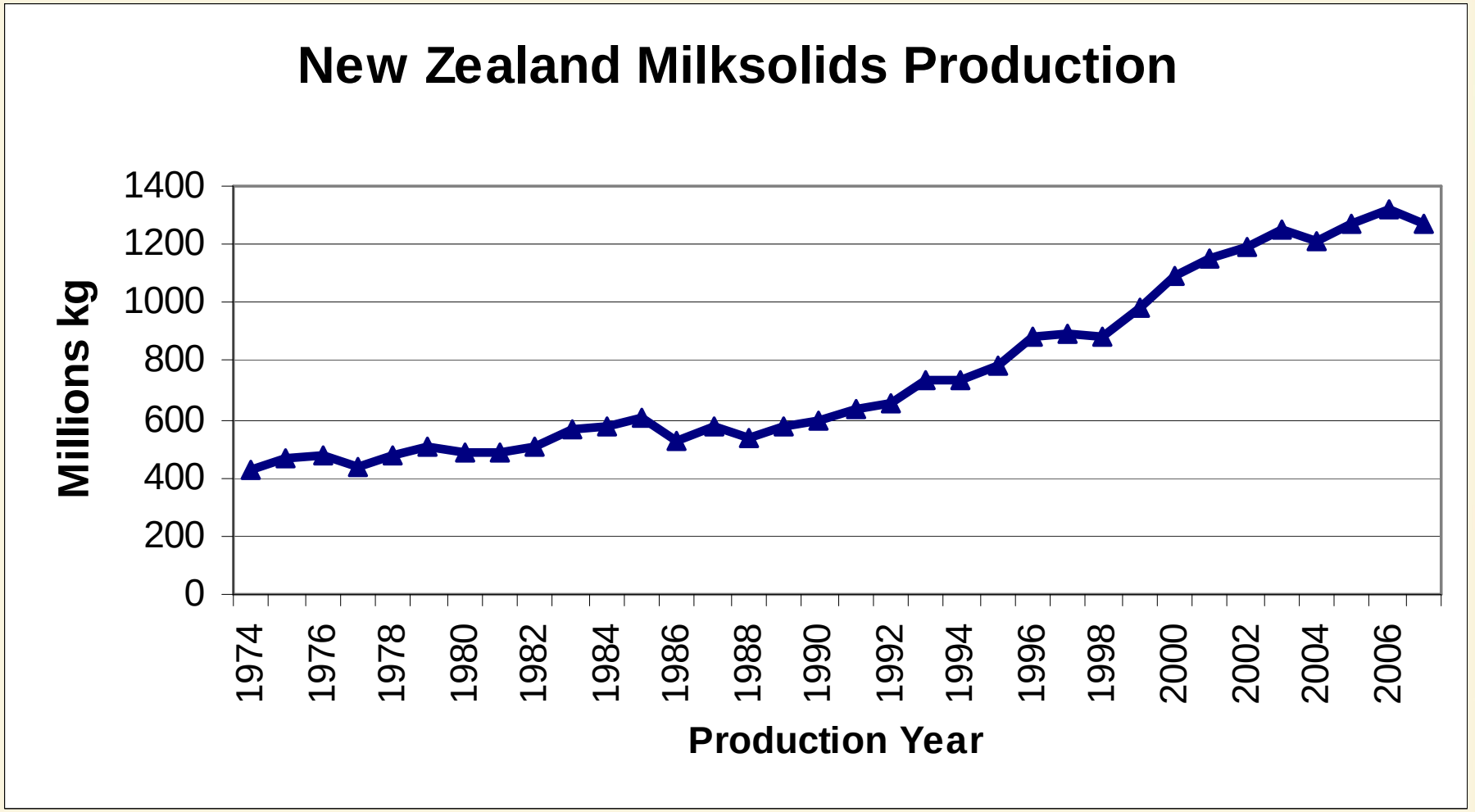
- Very low economic growth
  - Leads to well below trend growth in demand for commodities
- Extraordinary price volatility of 2008/2009 will depress supply very quickly
- Very low stock overhangs on the market
- Commodity markets will recover, probably from 2010 onwards
- Excellent medium/long term prospects for milk products

Grazing Model

"New Zealand actually shows the lowest production costs per litre despite the fact that its milk yields per cow are low"

Rabobank International (1998)

Profit is sanity; Production is vanity.



2 million cows → **4 million cows**


Driven by profit!
More land, more cows,
better grass management

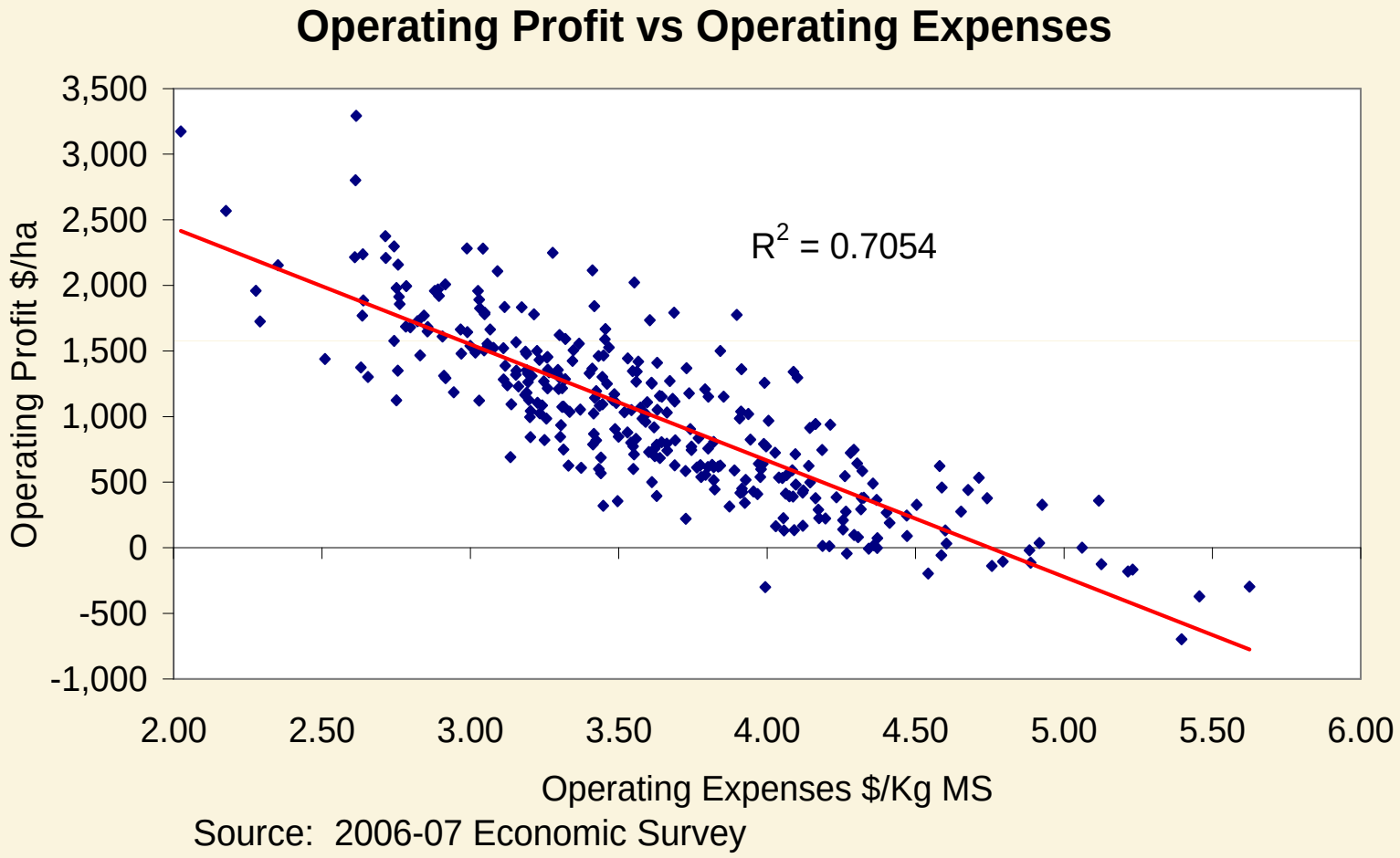
Keys to future

- Become very low cost
- Develop your skills e.g. grassland feed budgeting
- Very compact calving. Get the right cow
- Make plan for expansion
- Get more grazing land i.e. Milking platform
- Keep lots of A1 Bred replacements
- Monthly financial monitoring
- High labour productivity (16-18 hours/cow)

People who measure- learn and progress

People who don't measure- don't learn; don't progress

The key predictor of Profit



Source: 2006-07 Economic Survey

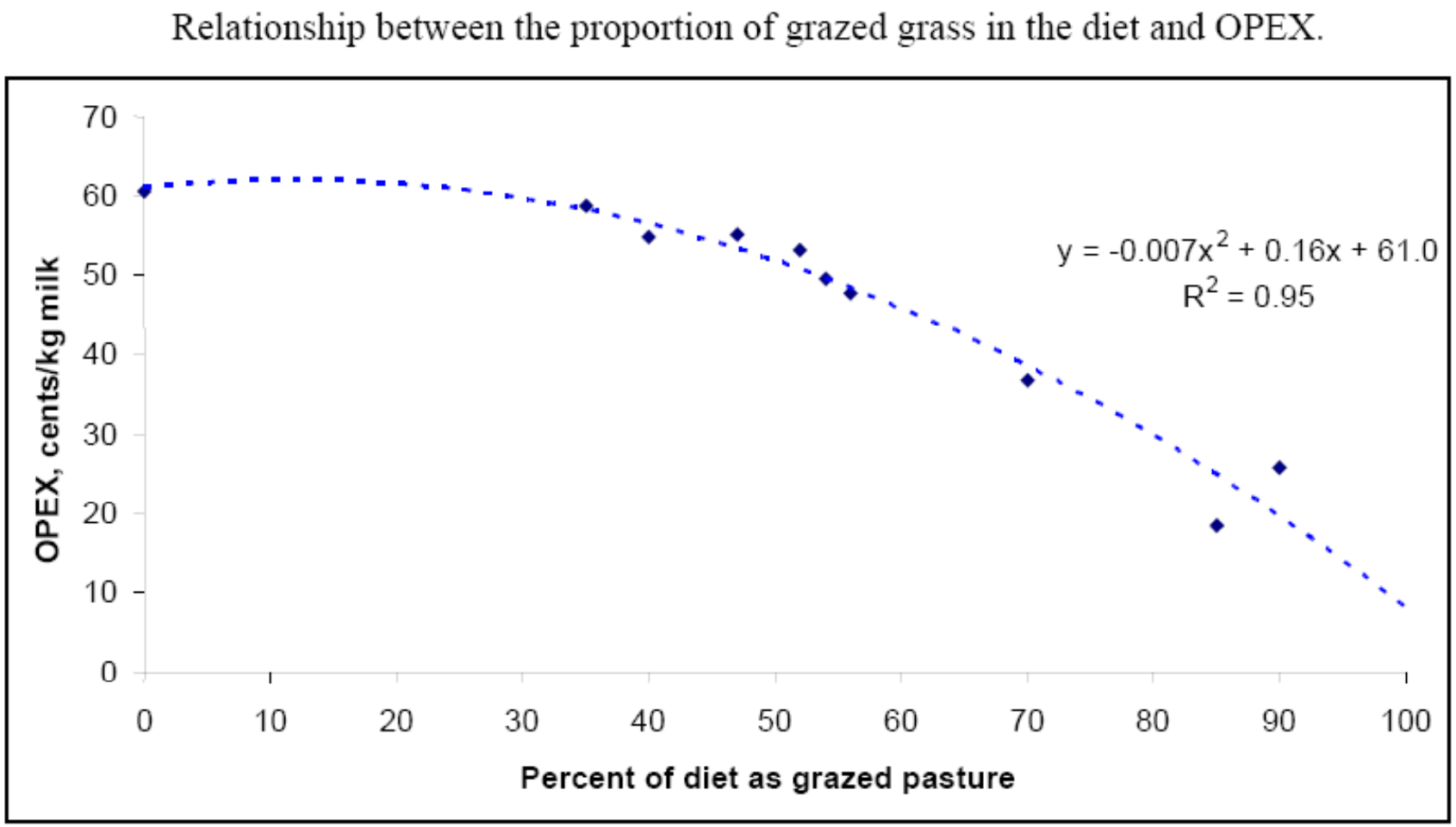
Average Cost of Production is the best indicator of Profit!

Drivers of Profit

	R^2
Cost of Production	0.70
Production /ha	0.36
Production /cow	0.19
Extra feed fed / cow	0.05

Summary of 20 years NZ Dairy Economic Survey data

High % grazed grass = low operating expenses



Reference; Roche & Newman – SIDE 2003

Grassland Management- the challenge

	Excellent	Moderate
Grows	18	11-13
Tonnes DM/Hec		
Utilisation		
Tonnes /DM/Hec	(85%) 15.3	(50-60%) 5-8
ME	12.2-12.6	10.5-11.0

1Kg of grass at 12.5 is better than 1kg of meal

Profit difference = +$600 US/acre

Lots of green leafy grass

Eat all the grass

Cows who are excellent grazers and calf every 365 days

Cows that last at least 4 lactations

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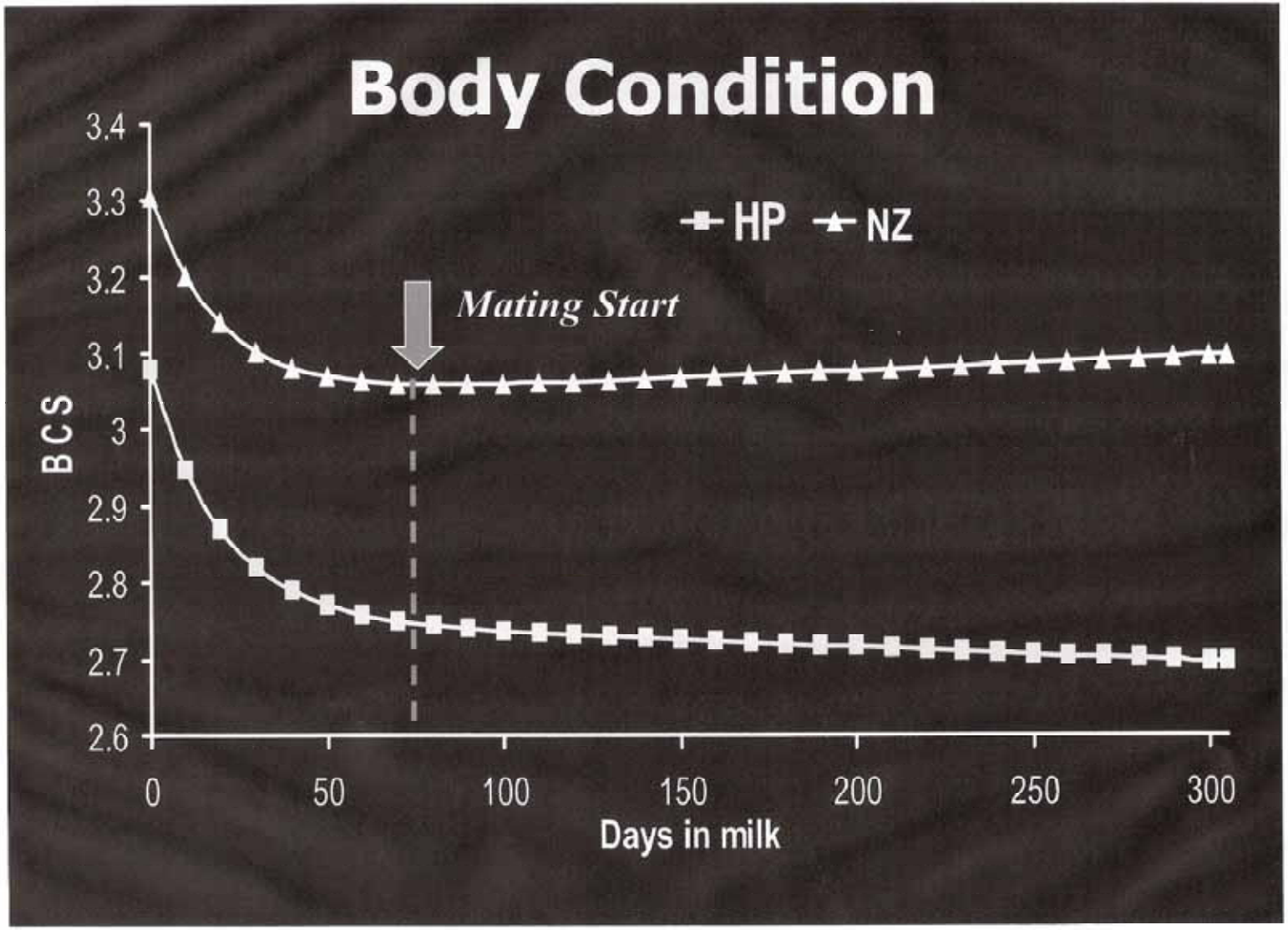
Compact Calving

- 50%+ calved in 2 weeks
- 90% calved in 6 weeks
- Below 6% empty on a 10 week breeding season
- KEY POINT
- Synchronise the Heifers
  - 6 days observation then PG injection
- 75% of heifers calving in under 2 weeks (at start)


Body Condition
HP
NZ
Mating Start
BCS
3.4
3.3
3.2
3.1
3
2.9
2.8
2.7
2.6
0
50
100
150
200
250
300
Days in milk

Lots of Heifers

- 100 cow herd with the " wrong " cow cant expand
- Lose too many cows 25%+ per year
- Cant get enough heifers in "suitable" window (25%)?

RESULT

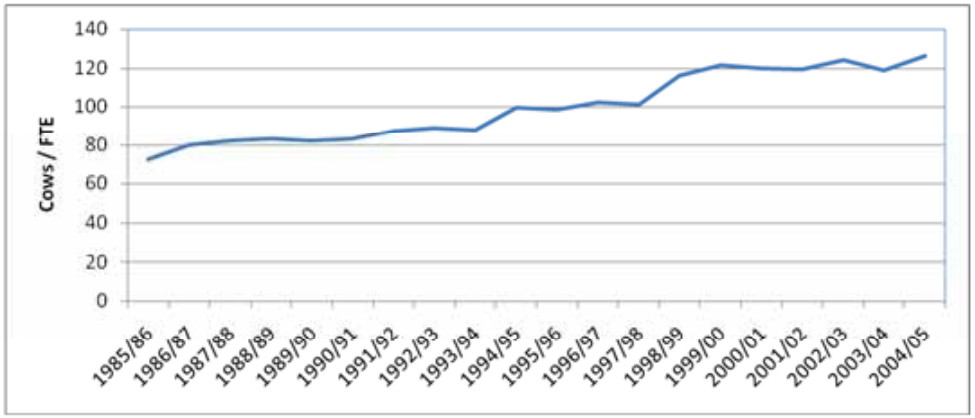
- No growth in the business
- Or buy in and risk major disease problems!

Lots of heifers – the right cows

- Very fertile herd (NZ x-bred)
- Very tight calving
- Excellent herd health- “closed herd”
- Excellent management
- 18% replacement rate
- 45% of herd numbers reared as heifers each year
- Herd numbers compound very rapidly

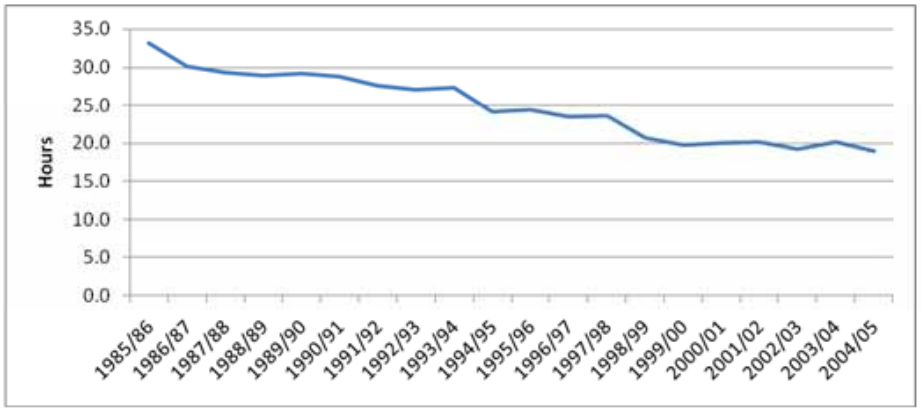
Lots of heifers- The right cows

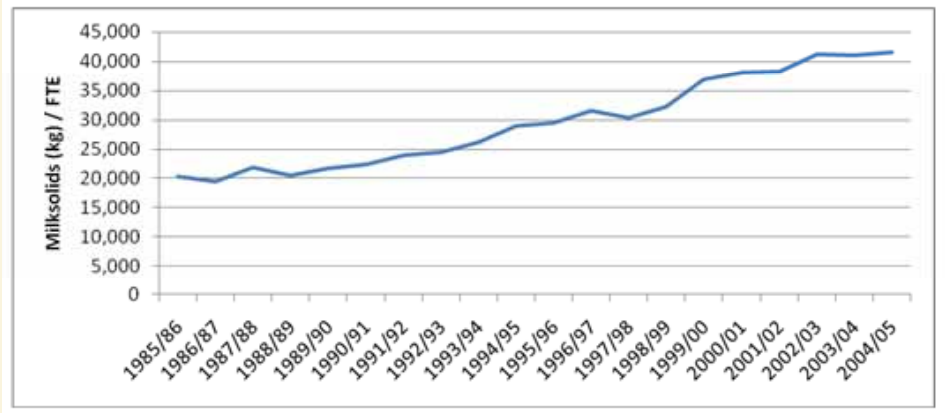
2008	100 cows	Keep 45	heifer calves
2009	100 cows	Keep 45	heifer calves
2010	127 cows	Keep 57	heifer calves
2011	149 cows	Keep 67	heifer calves
2012	179 cows	Keep 81	heifer calves
2013	214 cows	Keep 96	heifer calves
2014	256 cows	Keep 115	heifer calves
2015	305 cows	Keep 137	heifer calves



Cows / Full time labour unit
70 ⟶ 130

Hours worked / cow
33 ⟶ 18





Milksolids / Full time labour unit
20,000 ⟶ 42,000

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Simple Systems

- **Fast Milking:** **20 – 27 units** **-1 person**
  36 – 50 units **-2 people**

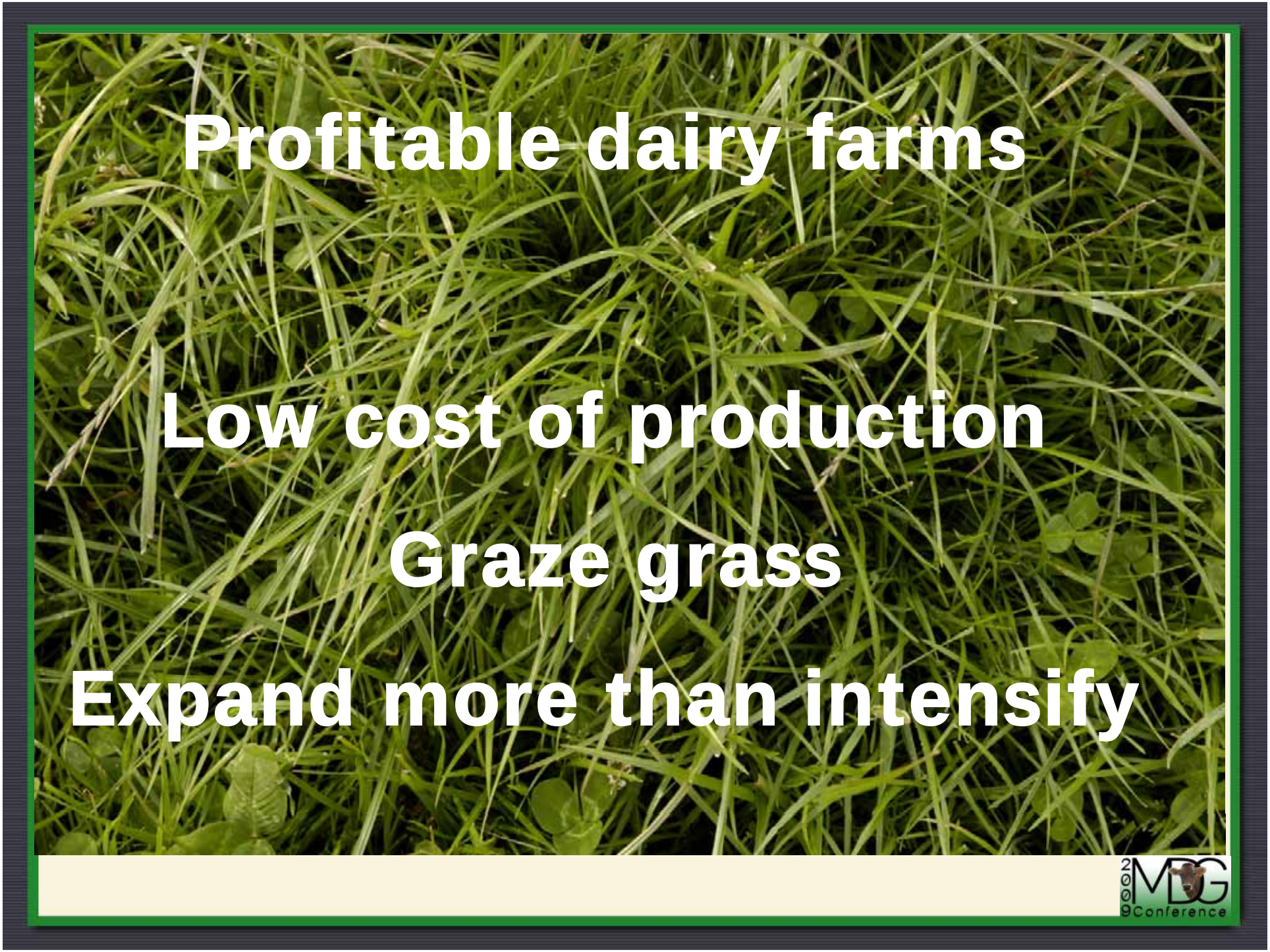
- **Long grazing season** **10 months +**
- **150 cows / person**
- **16 – 20 hours / cow / year**

Simplifying the farming system

- Only dairy cows (and replacements)
- Cows harvest their own food
- Cows spread their own manure
- Batch calving
- Batch calf rearing
- Batch mating

Simplifying the farming system (2)

- Focus on easy calving
- Once a day feeding of calves
- Rearing of calves outdoors
- Out wintering of cows
- Improved farm infrastructure
- Almost no machinery
- Weekly pasture measuring


Profitable dairy farms
Low cost of production
Graze grass
Expand more than intensify
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My Challenge to you

- Go Home
- Over next 2 days – Decide will I expand?
- Write down 5 actions you will take
- Put a plan in place to do it
- Then act
- Be a winner

Last word

- Success in life is based on good decisions
- Good decisions result from good information/knowledge
- People who measure constantly- learn constantly
- People who don't measure- don't learn
- Be a life-time student, hungry for knowledge
- Be excellent
- People make or break the system
- Good people are a treasure