

## Dairy Production: Using beestop

**Drew Collins**  
Head of Geography, The King's School



Dairying is global Source: Wikimedia Commons

Up until recently undertaking a study of the dairy industry within the Year 12 unit of People and Economic Activity has been about as niche as the proclaimed benefits of camels milk. However, with the recent rise in mainstream media coverage (The Project and Waleed Aly – Ch.10, The Checkout, Gruen Transfer, Landline and 7:30 Report – ABC, A Current Affair Ch.9), alongside Australia's ever increasing desire to know where our food products come from, there are many benefits if global dairying was chosen as the economic activity study for HSC Geography. Certainly not mainstream, and delivery is without textbook help, but the global dairy industry is changing, as too is the Australian landscape. There is more to moo about milk these days!

The challenge may well be getting an in-depth analyses of the enterprise. This can certainly let your students down if unattainable. So investigate these options first. Taking students to the farm is an amazing and an eye opening experience. It solidifies the knowledge learnt in class. *"I didn't know that about milk"* is often heard from students who readily consume the white goodness without knowing much about the production line. Getting to a farm can be achieved if a relationship were established with a local dairy farm. There are local options and depending where you are in NSW, it might be BEGA or South Coast Dairy, Norco in northern NSW, or the number of dairy farms operating across greater western Sydney and surrounds.

### FACTORS AFFECTING DAIRY PRODUCTION: BEEOPST

**Biophysical** – Cows need to eat and therefore pasture needs to grow with a long growing season.

- Rainfall = average 1200mm. Less than this can be met with irrigation.
- Temperate = 4 – 24°C. Outside of these production can drop by as much as 30%.
- Topography = flat or slightly undulating so the most energy as possible is put into milk production and not muscle mass needed to walk up and down steep hills.
- Soils = nutrient rich alluvial soils often found on floodplains.

# PEOPLE & ECONOMIC ACTIVITY: DAIRYING

**Ecological** – The key point here is sustainability.

Farmers are getting better at this and dairy farmers certainly know the benefits of farming in an ecological sustainable way.

- Keeping animal waste on site, instead of letting it wash into local watercourses, provides a ready made fertilizer.
- Utilizing stable waste from the equine industry and cardboard waste to inject into the soil increases moisture content and soil nutrients.
- Strip grazing and paddock rotation.
- Grey water use, underground irrigation and Natural Sequence Farming methods when used with long rooted (5-10m) lucerne have proved to be the system in a dry climate.
- Most recent studies into methane capture from pig farms are being investigated and changes to feed supplements have shown very promising results to help combat climate change.

**Economic** – there is so much information that relates to the economics of the dairy industry.

- Global deregulation and regional free trade agreements in Europe, between China and Australia, and TNC's like Fonterra (NZ), Parmalat [www.parmalat.com.au/brand/](http://www.parmalat.com.au/brand/) (Italian), or even the global brewery giant Kirin (Japan) have established a very competitive market. But at what cost?
- \$1/L "milk wars" (Coles and Woolworths where 70% of Australian milk is bought)
- Other primary factors have always had an influence like; consumer demand, capital, mobility of labour, establishing a competitive advantage and concepts like land rent mechanisms are dependent on whether the farm is producing market orientated milk (liquid milk) or materials orientated (milk products like cheese, yoghurt, ice creams)

**Organisational** – how the industry is arranged and how it operates.

Trends:

- Smaller number of farms with larger herds - "Get big or get out" was the catchcry of many
- Traditionally family owned and operated, now more agribusiness and even TNC's
- Dominance of a few retailers, some emergence of niche or boutique products from smaller farms
- Co-operatives emerging to compete with the larger players in the processing and retail areas e.g. [www.southcoastdairy.com.au](http://www.southcoastdairy.com.au)

**Political** – factors where decisions made by governments influence the nature & location of productive activity. These decisions have a greater impact on other BEESTOP points e.g. economics with free trade agreements between countries, and are made at a variety of scales.

- Local – rezoning of land for residential purposes
- Regional – European Union - Common Agricultural Policy (CAP) – government financial support to support agriculture within the EU
- National – former regulation ensured milk was available all year round for health and nutrition. Many remember milk left outside the primary classroom door only to curdle in the Australian heat. Deregulation of the dairy industry has opened it up to market forces with both good and bad consequences.
- Global – Greenhouse gas emissions and future targets

**Socio-cultural** – traditions, changing lifestyles, labour participation rates. The rising middle class in Asia dominates this point, despite a traditional lactose intolerance. Globalisation and the ease at which refrigerated products are now being transported around the world, even from a highly perishable material like milk, is becoming a realistic possibility.

- Primarily milk products like cheese, yoghurts, ice creams etc.
- Traditional powdered milk for use in westernised restaurants and canned baby formula.

## Diagram showing how the industry operates





# PEOPLE & ECONOMIC ACTIVITY: DAIRYING



Rotolactor milking equipment. Source: Wikimedia Commons



Source: <https://www.youtube.com/watch?v=z9D52e4TaFk>

- Increasing opportunities for quick highly regulated raw milk international exports and imports.
- Consumer choice – just slowdown next time you walk down the dairy aisle, it may take a while, or look at the many items which contain milk products.
- Some consideration needs to be given to other non-dairy alternatives too e.g almond milk and the huge variety of milk itself (see Pauls Smarter White Milk Commercial)

**Technological** – the dairy industry is like others and not immune to the technological advances which have reduced the need for farmers and manual labour, but have increased efficiencies along the way.

- Gone are the milkmaids, in are mechanised milking systems. From in line semi-automated parlours, to robotic or rotary dairy systems, and on to fully automated tracked and scientifically analysed systems where an IT degree is more useful.
- ‘Sexting’ of sperm to ensure female offspring (heifers) are produced on the dairy farm.
- Selective breeding [www.abc.net.au/news/rural/2017-01-19/holstein-heifer-calf-breaks-australian-auction-record/8194220](http://www.abc.net.au/news/rural/2017-01-19/holstein-heifer-calf-breaks-australian-auction-record/8194220)

- Even desert dairying in Saudi Arabia where, due to lack of water for pasture growth in the desert, feed is grown in the USA and imported into feedlots. Featured on National Geographic’s Mega Factories – Almarai is a site you must see! [www.almarai.com/en/media-center/video-center](http://www.almarai.com/en/media-center/video-center)



Source: Peter Broelman – [broelman.com.au](http://broelman.com.au)

There are plenty of options to explore in the People and Economic Activity unit of work. Naturally, a study where the enterprise is local will benefit students with a close connection to the activity. Many options are available to the dedicated teacher and the interested student. However, if you are thinking of doing something different next time around, why not try milk!

## Useful links

- Dairy Australia – [www.dairyaustralia.com.au](http://www.dairyaustralia.com.au)
- Natural Sequence Farming – [www.nsfarming.com/Principles/principles2.html](http://www.nsfarming.com/Principles/principles2.html)
- Shop Ethical – <http://guide.ethical.org.au/guide/browse/guide/?type=15>
- Diet Change Cuts Methane Emissions – [www.theage.com.au/victoria/diet-change-cuts-methane-emissions-in-cow-burps-20150804-girf6l.html](http://www.theage.com.au/victoria/diet-change-cuts-methane-emissions-in-cow-burps-20150804-girf6l.html)
- CHOICE Milk buying guide – [www.choice.com.au/food-and-drink/dairy/milk/buying-guides/milk](http://www.choice.com.au/food-and-drink/dairy/milk/buying-guides/milk)
- Pauls Smarter White Milk Commercial – [www.youtube.com/watch?v=z9D52e4TaFk](https://www.youtube.com/watch?v=z9D52e4TaFk)



Source: CSIRO\_SciencelImage\_3357\_Dairy\_cattle.jpg