

## 1. Overview of Trends & Issues in Dairying

**Globally:** Professor John Wibberley, RAU  
Cirencester

Dairy farming data from many countries strongly illustrate the loss of family-worked farms (Wibberley, 2014). Of some 1.4 billion cattle in the world, around 260 million are dairy cows and around 150 million families are engaged in milk production worldwide (FAO, 2014). Overall, world milk production increased by 50% over the three decades between 1982-2012, from 482M tonnes to 754M tonnes. Though still a minority of this total, non-cattle milk production (from sheep, goats, buffalos, camels) is also increasing (Faye & Konuspayeva, 2012).

This latter trend may assist small producers in sub-Saharan Africa allowing them to satisfy the informal market sector in the face of growing concentration of formal cow's milk marketing in such countries as Kenya. India is the world's leading milk producer with 16% of the total from some 45M dairy cows, followed by the USA, China, Pakistan and Brazil. While milk production has increased, number of producers has rapidly declined, especially in N.America & Europe.

However, India has a National Milk Day (November 26<sup>th</sup>) in honour of the late Dr Verghese Kurien, Father of 'The White Revolution', popularly known as 'the Milkman of India' (Anjana John *et al*, 2014). India's self-sustaining dairy industry stems from Kurien's belief and practice in nurturing the capabilities of farmers for socio-economic transformation. Kurien's innovative social entrepreneurship – driven by his integrity, fearlessness and perseverance - led to establishment of the dairy cooperative movement, starting in Anand and replicated elsewhere as *Amul*. He also founded the Institute of Rural Management Anand (IRMA) to promote equitable and sustainable development.

This successful collectivisation led to formation of India's National Dairy Development Board (NDDB) to replicate the *Amul* model nationwide. *Operation Flood* in 1970 was the world's biggest dairy development project and made India a milk self-sufficient country. Kurien was passionate to ensure that farmers gained control of primary production, processing and marketing. He deplored the political hijacking

of some cooperatives, believing in democratic control of autonomous cooperatives freed from government interference with farmer sovereignty over resources they managed.

USA trends are instructive. Dairy cow numbers declined from 17.5M in 1960, via 10.2M in 1990 to 9.1M in 2010. Partially compensated by increasing annual yields per cow, dairy farmer numbers (Producers) declined at a faster rate - from 369,210 in 1978, via 220,880 in 1988 to 60,000 in 2011 (Wibberley, 1990 & Fig.1). This represents loss of around one-third of a million dairy farmers in the USA during the past 30 years, a massive 84% loss. Adoption of Bovine Somatotrophin (rBST), which may increase milk yields by 15-25%, is greater the larger the herd size since fear precludes denial of use when competitors may adopt it.

**Fig. 1. Recent Decline in USA Dairy Producer Numbers with Herd Size Increase**

	Producers (k)	Producers (k)	% Production	% Production
Herd size	2010	2011	2010	2011
1-29	20.0	19.4	1.1	1.0
30-99	26.6	24.9	14.1	12.6
100-499	12.5	12.3	23.9	23.5
500-999	1.67	1.65	12.7	12.6
1000+	1.68	1.75	48.2	50.3
	<b>62.5</b>	<b>60.0</b>	<b>100</b>	<b>100</b>

Source: USDA, 2014.

EU dairy farmer numbers fell by 6.5% in the 27 countries in one year, 2011/12 to 2012/13 (www.dairyco.org.uk 2014) – with this fall greatest in the newest EU members, Bulgaria which lost 21.7% being 3,003 producers in that single year; and Romania where a 9% loss meant 32,934 farmers going out of dairying in that year, though still leaving one-third of a million dairy producers in Romania - being 36.3% of the EU27 total! Fig.2. shows decline in dairying in 5 countries over 25 years from 1989-2014 (Wibberley, 1990; MMB & DairyCo). England & Wales lost 7,000 of 17,000 dairy farmers between 2003-2013.

China leads the nations with the highest milk deficits yet is actively seeking to dismantle its

renowned energy-efficient agrarian structure of small farms in the name of supposed progress and political advancement, currently supplanting some 700,000 farming people with agribusinesses without regard to their alternative employment nor to the consequent loss of resilience of their national ecosystem security (but see Nie & Fang, 2013). Obsessive pursuit of 'least cost per kilogram of product' anywhere inevitably compromises sustainability criteria. Over-borrowing and failure to part-time farm and diversify threatens too.

**Fig.2. Decline in Dairying – especially Producer Numbers – 1989-2014; 5 EU countries**

(Source: Wibberley, 1990 & DairyCo 2014).

	UK	France	Spain	Portugal	Ireland
<b>Cows 1989</b>	3.0 M	5.6 M	1.7 M	0.4 M	1.4 M
<b>Cows 2014</b>	1.8 M	3.6 M	0.8 M	0.2 M	1.0 M
<b>F'mrs 1989</b>	50 k	268 k	251 k	108 k	69 k
<b>F'mrs 2014</b>	14.4 k	77 .2 k	19.6 k	6.9 k	18.4 k
<b>% Fmr loss</b>	<b>71</b>	<b>71</b>	<b>92</b>	<b>93</b>	<b>73</b>

In Africa, Ethiopia has the largest number of dairy cows (some 10.7M in 2011), followed by Kenya where some 4.8M tonnes of milk is produced per year (around 4.5M tonnes from cows and the rest from goats and camels). Kenya has some 2.75 million farmers around 650,000 of whom produce milk. Some 80% of Kenya's milk producers have fewer than 5 cows, and these small ventures (including those started by entrepreneurial youths) have been increasing since the 2003 restructuring of the Kenya Dairy Board and the revival of a new KCC (Kenya Co-operative Creamery) together with import/export adjustments. Post-election violence in 2008 disrupted dairying in the Rift Valley.

The concentration of milk processing as in other countries has the potential to encourage larger herds leading to displacement of small ones, and this trend could soon outstrip the welcome expansion of dairying in Kenya during the past decade to meet growing population and rising consumer demand for dairy products. Loss of dairy

farmers begs the question, what alternative productive activity can they engage in to contribute to Kenya's real economy rather than boosting unemployment and its community/geopolitical instability threats?

**Summary of Dilemmas and Developments in Dairying:-**

- Yield/Cow x Cows/Herd x No.of Herds → scale increase means Yield/Cow up, Cows/herd up and No.of herds and producers down substantially. To stay in dairying needs good succession planning;
- Processor concentration & power up;
- Supermarket concentration & power up;
- Milk price down (by 30% in UK from summer to autumn 2014) & relative to bottled water and other drinks worldwide;
- Bureaucracy post MMB (UK since 1994) & Quotas (UK since 1984);
- Robotic milking & precision farming
- Cross-breeding to blend productivity with resilience for harsher climes and diets
- AI - 'top of pops' bulls and 'Holsteinisation' as leading breed worldwide; genomics
- MOET (Multiple Ovulation & Embryo Transfer) and 'top of pops' dams
- Sexed semen – *Cogent* since 1995 (→ 93% reliability of female progeny)
- Adding value on farm to all Dairying outputs (cream, yoghurt, cheese, ghee etc.).

The pros and cons of these trends need to be addressed by producers, processors, sellers and policy-makers.

**References & Further Reading**

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John Wibberley

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## **2. Practical Progress for Dairy Farmers**

Duncan Forbes,

Managing director of Kingshay Farming  
and Conservation Ltd.

Kingshay are independent dairy specialists.

The company was founded in 1991 at a time when the government experimental husbandry farms were closing, ICI withdrew from agriculture and ADAS was no longer the free service it once was. Alert to this loss to the farming industry, the company was founded by Martin Hutchinson, Prof John Nix (formally of Wye College) and Richard Barter.

Kingshay offer Independent, practical research based services and advice and aim to bridge the “death valley” gap between research and practical farming. Membership is open to Farmers, Veterinary surgeons, associates and corporates. 30 – 35% of funding is from farmer’s subscriptions. Some feed companies pay subscriptions then provide the service free of charge to their customers.

Kingshay is based at the 640 acre Bridge Farm Glastonbury with 220 cows, young stock, beef and arable.

The range of research and services are considerable.

- Costings, analysis & products;
- Consultancy of technical and business advice and training.
- Developments of specialist products and programmes.

Some interesting examples of Kingshay research were presented. The work of NIAB on small plots was extended into bigger field plots where the selective grazing was used to judge the preference of cows for particular grass varieties.

A cow comfort study reported on cubical design with a novel frame developed by analysing a cow’s anatomy and movement function.

The Profit Manager Service provides an analysis of dairy herd profitability and costs.

Forage harvester machines are tested with a “Which” type report indicating the variation in DM delivered by different makes.

A Starling Project Bird Behaviour showed that the food lost to Starlings cost £96 minimum per 100 cows

Regulations are increasing so Duncan Forbes emphasised that for the future attention to detail with the monitoring of improvements is essential. Carbon foot printing of all agricultural products is being assessed for Sainsburys.

The range of services provided by Kingshay are too numerous to itemise in this summary but these can be viewed on Kingshay website. The presentation was fascinating, revealing some compelling statistics.

Duncan Forbes

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## **3. Our Story in farming: Family Farm viability and Succession**

John and Sally Down of Curry Mallet,  
Somerset.

This was an intriguing presentation of how one family’s personal experience caused them to reflect on how it might have relevance to many farmers. John Down came from a family who had been farming for centuries. At the age of 30 he struck out on his own, renting a council farm of 65 acres. By the end of the 1990’s his rented land had grown to 400 acres. The Downs had thought of buying but decided instead to rent a Duchy farm to expand. Interestingly, they decided to buy their own machinery instead of hiring

contractors. This was a way of giving their sons an extra interest on the farm. In due course a neighbouring farm of 150 acres became available for renting. This coincided with one son returning from college probably just in time because John fell off a ladder and after a spell in hospital was off work for a year

One son, Rodney had taken a Nuffield Scholarship and studied the business structure and the matter of succession planning. In earlier years, succession planning had not been possible when renting council farms. Encompassed in the planning studies was risk management. One of the biggest risks to succession planning and threat for the integrity of any farm is of marriage breakdown and subsequent divorce.

John and Sally Down

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#### **4. The Long View: experiences and strategies for staying in dairying.**

John Alvis, of Alvis Bros, Lye Cross, Bristol.

Some members of TAA SW are already familiar with Alvis Brothers farm as they visited during the summer tour of 2013. They farm 4500 acres in Somerset on which 1500 cows are milked for cheese production. 25% of their cheese is exported.

In his presentation to TAA SW seminar John Alvis said his strategy for staying in farming is down to the individual and depended on three elements. 1) heart. 2) head. 3) hands.

1) Heart, One must have a passion for the enterprise and share this commitment with others. One must however, guard against recklessness. In his strategy for the future, the family comes first.

2) Head. Business planning must be realistic. Events change, often over which one has no control; but one must react and this depends on one's own aspirations. Make the best use of one's resources. In financial planning the rigour of budgeting is paramount and once budgeted – stick to it!

Producing for the market is sacrosanct. In Alvis own business they found the black & white breeds are not suitable for cheese production; cross breeds are used. When buying be prepared to look around. For example, do not stick to the NFU because you have always done so.

3) Hands. There is no substitute for doing a job well. Outside auditing/legislation will only increase so just get used to it! Keep account of one's own housekeeping and consider ones neighbours.

Motivate staff by making them feel enthusiastic. They must feel ownership of their job; take them into your confidence.

When regarding the future, remember that currently there is a great anti-science culture in the UK but the opportunities are considerable because of the increasing demand for food. New technology must be embraced. Costs increase and the only way to counter this is to seek ways of adding value.

During the farm visit in 2013 it was explained that ordinary 'block' cheese could be bought at a supermarket cheaper than they could produce. Accordingly, the only way to achieve a margin is to package and present the product exactly how the customer requires.

In the question and answer forum afterwards the question of GM arouse. John Alvis said he could see its value in speeding the breeding process which would be much slower by conventional

cross-breeding. Trying to transfer a fish gene into tomatoes to make them frost resistant is Bizarre and best avoided.

John Alvis

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#### **5. "Cows in context"**

Richard Alford of Send a Cow and a Devon Dairy Farmers son.

Richard emphasised that Send a Cow (SAC) is about people, not cows. It was/is a scheme which promotes hope and security for the future. The scheme started by Christian Aid in 1988 by a group of West Country farmers. A visiting Archbishop from Uganda saw how our caste cows were sent for slaughter and wished they could be sent to Uganda especially to widows as a way of restoring the rural economy in Uganda. 25 years on SAC works in Kenya, Uganda, Ethiopia, Rwanda, Burundi, Zambia and Lesotho.

The reason SOC exists was itemised. 70% of Africa's population are farmers, relying on the land for food and a living. The number of people living in extreme poverty in Africa is

increasing. An estimated 32 million children in Africa are undernourished.

Initially cows were given to the man of the family but in developing the programme it was realised that female ownership proved far more effective. Women will spend 90% of their income on the family, whereas men spend 30 – 40 % only. A holistic farm approach developed over the years, with the focus on women; they accept new methods more readily and drive the whole system which is based on an organic agriculture approach.

Some interesting facts were presented about East African potential.

- INLR Genomic mapping revealed that red breeds are more successful than black and whites
- East Africa produces more milk than New Zealand.
- SAC have not yet found a single nutritionist in East Africa who knows how to feed a dairy cow!

Richard went on to address the matter of Cows and the environment. There has been a deal of accusatory muttering of late about the damage dairy cows do to the environment by their methane emissions. Boris Johnson famously declared “If you want to be green, don’t plant a tree, - shoot a cow”. Accordingly a five year programme on the assessment of the environmental performance of SOC in Uganda was made. Cows are stall fed with exercise yards. Urine and dung are harvested for compost. Food is grown and brought to the animal. The costs of cow gas emissions, compost preparation plus staff air and road travel were assessed. This amounted to the equivalent of 14Tonnes of CO2 produced. But balanced against that, 100 multi-purpose trees planted and 15 tonnes of compost added to the soil 29 tonnes of CO2 equivalent was sequestered.

In addition, soil fertility is increased and soil erosion – the scourge of Africa – is significantly reduced.

For the future SOC plans to set up an environmental monitoring programme and carry out more detailed and longer term environmental assessment of African work.

Richard Alford

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