

Livestock production – 2050 and beyond

Melina Tensen¹

RSPCA Australia, PO Box 265, Deakin West ACT 2600, Australia

¹Presenting author: Melina Tensen, mtensen@rspca.org.au

Summary

In the debate about feeding a growing world population, rarely is consideration given to the effect this might have on farm animal welfare. Livestock farming practices can adversely affect welfare by failing to provide animals with their basic needs, such as adequate space and the freedom to express innate behaviours. If we are to grow animals for food or fibre, surely we can do so without compromising their welfare? What if we first address the glaring deficiencies in today's food supply chain? Up to 50% of all food produced is wasted. In addition to food wastage, the livestock industry's contribution to greenhouse gas emissions poses a challenge to the sector. Poor eating choices contribute to a significant public health concern affecting Australians. It is only when we include 'animal welfare' in the mix of these economic, social and environmental factors that livestock production systems will be truly sustainable.

The projected increase in world population to more than 9 billion by the year 2050 (UN 2013) is seen by many in the livestock industries as an opportunity to increase the scale or the intensity of their operations. How else are we going to feed this growing population? World meat production is expected to double by 2050 and most of this production is expected to take place in developing countries (FAO n.d.).

But how reasonable is it to expect to keep doing what we're doing – just more of it – when there are clear signals along the food chain that change is imminent, if not already underway. For livestock production to be sustainable in the long term, consideration needs to be given to the impact of the farming system on the environment, on people and on the animals being farmed, while at the same time ensuring the business remains productive and profitable.

Today, regardless of whether the farming system is intensive or extensive, at some point animal welfare is compromised. It might be due to chronic stress as a result of intensive confinement, or it might be acute pain during an invasive procedure. And don't we love chopping bits off animals – tail docking, beak trimming, disbudding, dehorning, castration, mulesing – the list goes on. We feed antibiotics prophylactically, we give hormones to make animals grow faster and bigger, we give hormones to induce birth, and we give other additives that promote leanness. All in an effort to adapt the animal to a market demand or housing conditions or management practices that suit us more than they suit the animal. In some industries, whether you are male or female determines whether you live a productive life or are considered a waste product. Breeding for productivity rather than robustness, health and longevity can have poor animal welfare outcomes. Not to mention poor stockmanship and animal-handling skills. And what about the suffering of livestock on marginal or drought-stricken lands where feed is minimal at best?

Livestock farming uses land, water and energy resources most of which are finite or scarce. Seventy percent of greenhouse gas emissions by the agricultural sector are attributable to livestock production which contributes about

10% to total national emissions (Australian Government 2015). Climate change and the associated increase in drought, fire and flood events, put in question the viability of livestock production in affected areas. The livestock industry's contribution to greenhouse gas emissions (methane (56%) and nitrous oxide (73%)) (Government of Western Australia n.d.) pose a challenge to the sector. FAO's mitigation interventions for beef cattle production systems propose improving pasture quality and better grazing management, preventive health measures as well as stress reduction through the provision of shade and water for cattle. Grain supplementation was not included as an emissions mitigation intervention for ruminants due partly to concerns that it reduces grain available for human consumption (FAO 2013).

Poor lifestyle and eating choices have contributed to a public health concern in Australia. Sixty-three percent of adults in Australia are considered overweight or obese (AIHW n.d.). Consumption of meats high in saturated fat and salt is a contributor to heart disease - the single biggest killer of Australians according to the Heart Foundation (NHFA 2013). There is convincing evidence that high levels of red and processed meat consumption (>200g/day) increases the risk of bowel cancer (IARC 2015). The Australian Dietary Guidelines (NHMRC 2013) recommend no more than 100g/day (raw weight) of lean red or poultry meats and advise including other protein-rich foods in our diet such as fish, eggs, nuts, seeds and legumes that provide the same essential nutrients (iron, zinc, vitamins, essential fatty acids).

Between 30 to 50% of food produced for human consumption is wasted globally (FAO n.d.; IME 2013). In Australia, at household level alone, it is estimated that 20% of all food purchased is discarded (Foodwise n.d.). This is an appalling statistic. Wastage also occurs at retailer level, in food service, and further down the supply chain during storage, slaughter, lairage, transport and on farm. Food waste represents a waste of resources and, in the case of animal-based foods, a waste of an animal's life.

Certain foods are generally so cheap that some consumers don't think twice before throwing it in the shopping trolley – \$1/litre milk, or \$5 chicken, or \$3 cage eggs. If food is cheap, then it's not surprising to see wastage. Throwing cheap food in the bin is just as easy as throwing it in the shopping trolley.

On the other hand, a small but increasing number of consumers are seeking a closer connection with the land and the people that produce their food – they want locally produced food, grown with consideration for the environment, human health and animal welfare – and they are willing to pay for it. Throw into this mix the concerns about the impacts of pesticide use, veterinary products, additives in processed foods and antibiotic use, and it's not difficult to see the popular appeal of farmers' markets and the 15% yearly increase in organic food production – particularly beef and dairy (Australian Organic 2014).

So, what does all this mean for the future of livestock production in Australia? Are we going to produce ever more food with more animals and more resources and at any cost? Or is it perhaps possible to consider an alternative food supply chain that truly encompasses the concept of sustainability? A supply chain that:

- is supported by a government that takes a leadership role in animal welfare and dedicates resources to progressing national animal welfare standards and animal welfare research;
- is supported by a government that recognises the importance of productive land, access to water and renewable resources to the production of food and therefore prioritises climate change mitigation and biodiversity conservation;
- acknowledges that food production and consumption should avoid negative environmental, health or social impacts;
- is research-driven and innovative in its use of technology;
- recognises that food waste is an unacceptable consequence of food production and seeks opportunities to reduce or eliminate wastage at each stage of the chain;
- pays farmers a fair price for the food they produce, that allows farmers to invest in improving infrastructure, to take measures to mitigate the impacts of climate change, to manage their land for future generations, to ensure staff are trained and competent, to provide a high level of animal welfare, as well as earn a decent living;
- recognises that food is valuable because the cost of production needs to take into account all the resources required to produce it and the impact its production has on those resources;
- believes good animal welfare is an inherent part of livestock production and provides animals with a life worth living. A life that encompasses good nutrition, a suitable environment, good health, the ability to express

innate behaviours, and the opportunity to experience positive affective states (Mellor and Beausoleil 2015).

All those with an interest in the food supply chain should work together towards achieving a sustainable livestock production system that sees no party disadvantaged – least of all the animals we farm for food. Livestock production in Australia should be focussed on creating a high-value product with strong environmental, human health and animal welfare credentials, which is reflective of the true cost of production.

If we can't provide that value-add, what's going to stop consumers buying in vitro meat?

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