

EDITORIALS

Support for breastfeeding is an environmental imperative

Formula milk contributes to environmental degradation and climate change

Naomi Joffe *technician and environmental lead*, Flic Webster *milk donor*, Natalie Shenker *researcher*

Hearts Milk Bank, Rothamsted Institute, Hertfordshire, UK

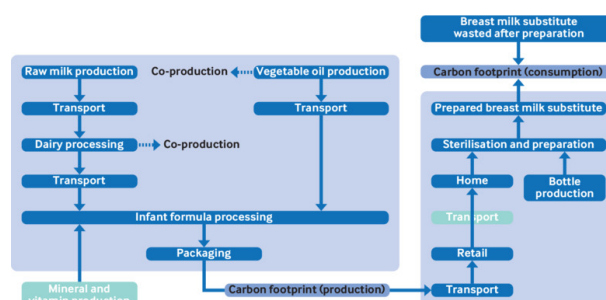
Conversations around the complex subject of infant feeding have invariably focused on health outcomes, but recent studies have highlighted the environmental cost of decades of disinvestment in services to support breastfeeding. Breastfeeding uses few resources and produces minimal or zero waste.^{1,2} The associated infant and maternal health outcomes produce healthier populations that use fewer healthcare resources.^{3,4} The production of unnecessary infant and toddler formulas exacerbates environmental damage and should be a matter of increasing global concern.^{1,2,5}

Water, waste, and methane

The food industry, particularly dairy and meat production, contributes around 30% of global greenhouse gases. Most formulas are based on powdered cows' milk. The average water footprint of whole cows' milk is around 940 L/kg; one kilogram of milk gives about 200 g of milk powder, meaning the water footprint of milk powder alone is roughly 4700 L/kg.^{6,7}

Methane production from livestock is second only to production by the oil and gas industry,⁸ and methane traps heat in the Earth's atmosphere 30 times more potently than carbon dioxide.⁹

A 2009 study showed that 550 million infant formula cans, comprising 86 000 tons of metal and 364 000 tons of paper are added to landfills every year¹⁰; the formula industry has more than doubled since then. The amount spent on marketing infant formula worldwide has been estimated at over £5bn (€5.6bn; \$6bn) a year—£36 for every child born.¹¹ Costs to the environment include paper use, postage, plastic waste, and transport costs at multiple stages in the production, marketing, and sale of breastmilk substitutes (fig 1).²



Environmental impact of production and consumption of formula milk and breastfeeding (adapted with permission from Karlsson et al²)

As powdered cows' milk is nutritionally inadequate for a developing infant, formula is supplemented with additives such as palm, coconut, rapeseed, and sunflower oils; fungal, algal, and fish oils; and minerals and vitamins. Although it remains unclear whether these supplements are nutritionally and developmentally adequate, their production has an undeniable effect on the environment.² Nestlé's recent temporary suspension from the Roundtable on Sustainable Palm Oil highlights potential deficiencies in the culture of sustainability in global food.^{12,13}

Only 40-50 formula processing plants exist worldwide, producing about 3.8 million tonnes of infant formula each year.^{14,15} The food miles accumulated in transporting raw ingredients to these plants and transporting finished formula to consumers worldwide are considerable.² China imported almost 180 kilotons of prepacked infant formula in 2015, over 90% of which was from Europe.¹⁵

Carbon footprint

Powdered infant formula can be made safely only with water that has been heated to at least 70°C.¹⁶ In the UK, the estimated energy cost of boiling kettles for families that formula feed over

the first year of life equates to over 1.5 million kg of CO₂,¹⁷ equivalent to charging almost 200 million smartphones.¹⁸

Overall, breastfeeding for six months saves an estimated 95–153 kg CO₂ equivalent per baby compared with formula feeding.² For the UK alone, carbon emission savings gained by supporting mothers to breastfeed would equate to taking between 50 000 and 77 500 cars off the road each year.¹⁸ Over 2.8 million tonnes of CO₂ are produced from the 0.72 million tonnes of infant formula sold yearly in just six countries.¹

Half of these greenhouse gases come from follow-on formulas, created in response to the World Health Organization code that prevents the marketing of formulas for babies aged 0–6 months and marketed with messages that tap into vulnerabilities of busy and anxious parents. Follow-on formulas are unnecessary according to regulators¹⁹ and potentially harmful.²⁰

Globally, only 41% of the 141 million babies born annually are exclusively breastfed until 6 months.²¹ Not one country meets all WHO's objectives for supporting mothers to breastfeed.²² The UK has some of the lowest breastfeeding rates in the world and one of the highest uses of formula per capita,^{23 24} despite more than 85% of pregnant women wanting to breastfeed.²⁴

This is a societal responsibility to which we can all contribute.²⁵ A multitargeted approach is required,⁴ including investment in medical education so doctors can support and signpost mothers if difficulties arise, improved antenatal information and care enabling parents to develop feeding plans alongside birth plans, better access to screened donor milk from a regulated milk bank when supplementation is needed, and increased numbers of certified lactation consultants. Cultural change is long overdue to remove the myriad obstacles to breastfeeding faced by new mothers.

The UK government recently opened a public consultation to help improve breastfeeding rates, which offers an opportunity for all of us to act.²⁶ We need to acknowledge that “our house is on fire” and that the next generation requires us to act quickly to reduce carbon footprints in every sphere of life.²⁷ Breastfeeding is a part of this jigsaw, and urgent investment is needed across the sector.

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