

Clerk Nick Henry
Committee for Agriculture, Environment
and Rural Affairs
Room 242, Parliament Buildings
Stormont,
Belfast
BT4 3XX

14 July 2021

Re: Climate Change Bill Consultation

Dear Chair,

Breastival is a unique, award-winning festival which aims to support, normalise and celebrate breastfeeding as part of everyday life. Since 2017 families, parents to be, friends & supporters have gathered at the annual event and are encouraged to learn, laugh and maybe even dance to celebrate World Breastfeeding Week.

We would like to show our support for the Climate Change Bill and respond to the consultation on it. We believe Northern Ireland needs this strong climate legislation because time is running out for the planet, and Northern Ireland could play a leading role in reducing emissions and co-operating with others to improve the life chances of future generations and all species.

Northern Ireland's greenhouse gas emissions are higher than the UK average and are falling more slowly. In terms of emissions per capita, Northern Ireland produced the equivalent of 11.3 tonnes of CO₂ per person compared with a UK figure of 6.8 tonnes of CO₂ per person in 2019. Since the baseline year of 2014, the UK has reduced emissions by 44% while Northern Ireland has reduced emissions by 18%.¹

Northern Ireland is clearly lagging and does not currently appear to be pulling its weight in the fight against climate breakdown. A climate change law with strong and legally binding greenhouse gas reduction targets is needed if Northern Ireland is to do its fair share.

¹ DAERA 2021 [Northern Ireland Greenhouse Gas Inventory](#)

We support the Climate Change Bill and would like to draw particular attention to the clear link between infant feeding and climate change:

1. There is a need to reduce the emissions caused by current agricultural practices in N. Ireland in general.

Agriculture is the largest emitting sector of greenhouse gas emissions in N. Ireland, accounting for 26% of all emissions produced including methane.² Presumably there will be increased efforts to lower emissions being caused by agriculture in Northern Ireland, as well as across Ireland. We would appreciate if you could consider our specific focus of concern which is the inflated demand for infant formula due to unethical marketing practices in NI and across the world.³ We are aware that many farmers across the island of Ireland have been encouraged to increase dairy milk production in order to supply milk powder for infant formula production.

Ironically, farmers receive low prices for milk produced in N. Ireland (less than 30p a litre)⁴ which is obtained at serious cost to the environment, while multi-national companies make huge profits converting powdered milk into infant formula products. The formula industry has also created market-led products known as follow-on formulas and growing up milks – these products have been described as unnecessary and expensive as well as detrimental to child health due to their high sugar content.⁵ These products are also being called out due to the increasingly evident negative environmental impact that they are causing.

2. The aggressive marketing of infant formula in Northern Ireland and across the world undermines breastfeeding and displaces breastmilk which is regarded as the optimal nutrition for babies.

Babies under 1 year of age who do not have access to breastmilk for a variety of reasons, including where their parents' preference is to formula feed, need to be fed infant formula. But while infant formula is an essential breastmilk substitute for non-breastfed babies, its inappropriate marketing has been described as 'out of control' and blamed for 'driving dangerous over-consumption in the interests of corporate profits'.⁶

Breastmilk has been described as liquid gold and personalised medicine - it is a living liquid which contains hundreds of components including nutrients, antibodies and stem cells and many other components which have not yet

² ibid

³ IBFAN (2017) [Breaking the Rules, Stretching the Rules](#)

⁴ <https://www.independent.ie/business/farming/dairy/milk-prices/>

⁵ First Steps Nutrition Trust

⁶ Hastings et al (2020) [Selling second best: how infant formula marketing works](#)

been identified. Only one in ten babies in N. Ireland are exclusively breastfed to 6 months as recommended by the WHO. Most infants in N. Ireland are formula fed and this has a huge negative impact on infant and maternal health.⁷

3. Breastmilk has been described as the most environmentally friendly way to feed a baby – it has zero waste, minimal carbon footprint and negligible water waste.⁸

“Human milk is not skimmed, processed, pasteurized, homogenized, packaged, stored, transported, repackaged, dried, reconstituted, sterilized or wasted. More important to many people nowadays, it is not genetically modified (GM). It requires no fuel for heating, no refrigeration, and is always ready to serve at the right temperature. In short, it is the most environmentally friendly food available.”⁹

Breastfeeding offers a secure food source in the face of uncertainty of the future of global food systems.¹⁰

Breast milk is gentler and better absorbed into babies system than formula - resulting in less waste and less nappies than formula fed babies.

Delay in return of menstrual cycle also means less sanitary towels in landfill.

Breastfeeding contributes to the prevention of global warming, protects biodiversity and conserves natural resources.

Breastfeeding reduces the disease burden for society.

4. Infant formula and toddler milks are ultra-processed foods.

Besides the increased risk to health, there is a massive environmental cost including the generation of emissions involved in the manufacturing, processing and distribution of infant formula and toddler milks.¹¹

There are at least 40 ingredients in standard infant formula made from cow's milk including: Whey protein (**milk**), vegetable oils (sunflower, coconut, rapeseed), lactose (**milk**), skimmed **milk**, 2'-Fucosyllactose (2'FL), calcium

⁷ Victora et al 2016 The Lancet Breastfeeding Series [Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect.](#)

⁸ GIFA 2019 [Green Feeding Climate Action from Birth](#)

⁹ Francis and Mulford 2000

¹⁰ Zadkovic et al 2021 [Breastfeeding and Climate Change: Overlapping Vulnerabilities and Integrating Responses](#)

¹¹ GIFA 2019 [Green Feeding Climate Action from Birth](#)

citrate, **fish** oil (DHA), potassium citrate, magnesium chloride, potassium hydroxide, emulsifier (**soya** lecithin), potassium chloride, choline bitartrate, acidity regulator (citric acid), L-phenylalanine, sodium phosphate, sodium chloride, vitamin C, calcium hydroxide, taurine, L-histidine, inositol, nucleotides (cytidine-, disodium uridine-, adenosine-, disodium guanosine-5'-monophosphate), antioxidants (tocopherol-rich extract, ascorbyl palmitate), ferrous sulphate, zinc sulphate, vitamin E, L-carnitine, niacin, pantothenic acid, copper sulphate, thiamin, riboflavin, vitamin A, vitamin B₆, manganese sulphate, potassium iodide, folic acid, sodium selenate, vitamin K, vitamin D, biotin, vitamin B₁₂

The following is a list of some of the key aspects involved in the life cycle of producing infant formula from cow's milk:

- Feed for cows contains palm oil, soy oil and Genetically Modified Organisms (GMOs) – consider the deforestation, decimation of natural habitat, impact on flora and fauna, bee population decline, hedgerows, birds
- Water for cows and irrigation – processing of water and wastewater
- Fertilisers, pesticides – getting into food chain, toxicity, wildlife impact
- Cow gas – methane contributes to atmospheric warming
- Pollution – effluent run off, antibiotics in water sources
- Energy used in farming – crop management, heating, equipment, milking operations, cleaning (huge amount of water used)
- Transportation – CO₂
- Pasteurisation – CO₂, energy use
- Refrigeration – high energy demand, use of GHG as refrigerants
- Processing of all additional ingredients such as sunflower oil which includes land preparation, planting, watering, harvesting, seed separation, transportation
- Additional consideration of impact of some ingredients such as Palm Oil which is linked to the deaths of orangutan population due to deforestation
- Minerals e.g., Calcium Hydroxide - this will involve Mining of material – energy, transportation, pollution; Purification of material – grinding, sieving, reactions, purification; Transportation – typically manufactured in places like China/India
- Vitamin production – for example Vit D comes from lanolin – sheep reared (environmental impact like cows); Sheared and lanolin removed from the wool by washing process (water intensive/detergent – wastewater to deal with); Wastewater centrifuged to spin out lanolin – energy to operate equipment; Lanolin refined into powder – energy process, shipping etc; Powder subject to high intensity UV light to cause reaction into vit D; Filtered and powder dried
- Packing material – this could include the production of Steel tins and plastic lids; Aluminium in packaging; Mining of iron and chromium and magnesium etc – energy, transport etc; Melting of iron ore, limestone etc – involving very

energy intensive temperatures of thousands of degrees; Rolling of steel, cutting, forming, bending, etc

- Transportation - Drilling for oil and initial processing; Transportation to refinery (pumping); Distillation to separate out fractions – multiple times – heat, energy, waste; Catalytic cracking – high temperature / high energy process

These processes use FINITE resources. Energy for processing / transport etc still mostly from fossil fuels. This is not sustainable.

Generation of waste from these processes include:

- Greenhouse gases – including Carbon dioxide, methane, nitrous oxide and hydrofluorocarbons
- Run off / liquid effluent
- Chemical waste
- Waste packaging
- By products

The manufacturing of infant formula involves the following:

- Wet mixing phase – pasteurised milk mixed with other ingredients
- Concentration phase – liquid is reduced – heat used for this
- Spray drying – high energy – concentrated mixed pumped under high pressure through spray dryer with hot air travelling from bottom to dry product to powder. Then there will be delumping, sieving etc
- Packing phase – resource heavy – steel / plastic containers, plastic scoops, ink etc
- Also need to consider - Steel / metals / plastics etc for equipment/pipes/pumps/valves etc; Electrical components; Utilities – steam / nitrogen / compressed air etc; Water for washing; Lab testing; Transportation; Storage; energy and waste from use and disposal

Additional products required to feed babies (and the subsequent production of these items):

- Bottles
- Teats
- Caps
- Steriliser
- Bottle brushes
- Water / energy for cleaning / to make formula
- Prep machines
- Bottle warmers/Bottle bags
- Advertising materials – most mothers get some pamphlets from formula companies
- Early return of menstrual cycle and cost of associated sanitary products
- Many of these items are plastic – difficult to recycle

Summary of Key Statistics in relation to infant feeding decisions and subsequent impact on the environment and climate change.^{12 13}

- **Formula feeding an infant up to six months requires approximately 21kg of formula which creates approximately 200kg CO₂-eq. of GHG**
- It takes more than 800 litres of water to make one litre of cows' milk.
- Every 1 kg of powdered milk has a 'water footprint' of up to 4,700 litres.
- The production of one kg of formula generates 11-14kg of CO₂-eq. of GHG
- In the UK alone, supporting more women to breastfeed would be the equivalent of taking 50,000 – 77500 cars off the road each year
- Safe preparation of bottles of formula involves heating water to 70 degrees Celsius, which uses as much energy across the UK as keeping 200 million smartphones charged.
- A study undertaken 30 years ago (in 1989-1991) found that 550 million infant formula cans are added to landfills every year – comprising of 86,000 tons of metal and 364,000 tons of paper. It is estimated that the number of cans going into landfill each year has at least doubled if not tripled since then.

To sum up in the words of Professor Julie Smith:

“Milk formula harms the environment not only through land clearing, water use, pollution and methane gas from dairy farming, but also through energy and water waste during manufacturing and distribution, and then due to packaging, food waste, and water and energy use to ensure hygiene. It increases maternal and child illness and chronic disease and thereby health treatment costs borne by families, insurers and taxpayers.

“¹⁴

Breastival supports other organisations such as Code Monitoring NI and is keen to ensure that society and decision makers are more aware of the impact of infant feeding decisions on the environment and climate change, and we would be happy to co-operate with the Agriculture, Environment and Rural Affairs Committee and others in this endeavour.

Yours sincerely,

Catherine Muldoon

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¹² Joffe et al 2019 [Support for breastfeeding is an environmental imperative](#)

¹³ Smith 2019 [A commentary on the carbon footprint of milk formula: harms to planetary health and policy implications](#)

¹⁴ Smith 2019 [A commentary on the carbon footprint of milk formula: harms to planetary health and policy implications](#)