|  |
| --- |
| **Climate change impacts of the infant nutrition transition: estimating greenhouse gas emissions** |
| **Background/Objectives**  Global markets in milk formula are booming, with unrecognised environmental costs. This study evaluated greenhouse gas (GHG) emission impacts of milk formula production for selected Asian Pacific countries.  **Methods**  A life cycle assessment approach was used to estimate kg CO2 eq. emissions per kg of milk formula, using GHG emission factors for milk powder, vegetable oils and sugars identified from a literature review. Proportions of ingredients were calculated using FAO Codex Alimentarius guidance on macronutrient composition and ingredients for milk formula products. Estimates were for production and processing of individual ingredients from cradle to factory gate. Annual sales data sourced from Euromonitor International provided descriptive analyses of emissions for six countries from 2012 to 2017. Six lower-middle,  upper-middle and high-income countries (Australia, South Korea, China, Malaysia, India, Philippines) were considered. Milk formula is for Infants and young children (0-less than 36 months).  **Results**  Annual emissions per kg for production of milk formula ranged from 3.95 to 4.04 kg CO2 eq. Projected emissions for China for 2017 were 4,219,052 Tonnes CO2 eq. Milk formula use in the six countries contributed 2,893,030 Tonnes CO2 eq. to global GHG emissions in 2012 (including food waste, excluding emissions associated with blending, and with distribution and consumer use phases). Aggregate emissions were highest for follow-up milk formula products.  **Discussion**  Shifting children’s diets to optimal breastfeeding improves diet and health and contributes significantly to improved sustainability of the food system and to the environment  **Keywords** milk formula, greenhouse gas, breastfeeding, natural capital, environment, lifecycle analysis, dairy |