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What is the global environmental paw print of dry pet food? Study provides new analysis



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As rates of global pet ownership increase, so too do the environmental impacts associated with pet food. However, these are not well quantified. National assessments differ in how they account for the relative impacts of the animal by-products (ABPs) used in pet food, which, while less impactful than animal products such as meat, milk and eggs, have non-negligible effects on the environment. By assessing ABPs, this study identifies the emissions, land-use and water-use burdens of global dry pet food production.

Over half of all global households now own either a cat or dog. In contrast to the growing debate about the environmental impact of human food production, and livestock farming in particular, the environmental footprint of pets has received relatively little attention.

The European Commission has established a [Product Environmental Footprint Category Rule \(PEFCR\)](#) on pet food (dry and wet pet food for cats and dogs)¹. One of the steps in the development of the PEFCR is to assess the environmental impacts of representative products — thus, of the average product on the market.

The new study, *'The global environmental paw print of pet food'*, was carried out independently of the PEFCR on pet food. This study begins with the premise that there has been no global assessment of pet diets and their impact; one reason for this may be that a primary component of pet food is ABPs, which are not typically consumed by humans and, therefore, have limited value in the human food market. This may lead to the incorrect assumption that the associated impacts of pet-food production are negligible, say the researchers. Conversely, previous impact studies have assigned an equal environmental impact to all animal-derived product mass — for example, the same impact for a given amount of prime steak and ABP — and greatly overestimated the environmental impact of most pet foods as a result².

The researchers estimate the global environmental impact of pet food on land use, greenhouse gas (GHG) emissions and freshwater abstraction. They focus on cats and dogs, which constitute 95% of global pet food sales, and use an economic valuation approach to allocate the impact of



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What is the global environmental paw print of dry pet food? Study provides new analysis (continued)

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ABPs and derive a representation of their environmental burden. Their approach quantifies the resource use and environmental impacts associated with different commodities and ingredients in pet food based on their value, distinguishing ABPs from standard meat commodities. The study estimates a globally representative pet food composition and compares environmental footprint results to studies where impacts are allocated by mass. By improving estimates of the environmental impacts of pet food production, the industry’s resource use can be considered more consistently within the global food system, say the researchers.

The results showed that, annually, global dry pet-food production is associated with 56–151 million tons of CO₂ equivalent emissions (1.1–2.9% of global total); 41–58 million hectares of agricultural land use (0.8–1.2% of global total); and 5–11 km³ of freshwater use (0.2–0.4% of global total). These impacts are equivalent to an environmental footprint of roughly twice the land area of the United Kingdom, and represent GHG emissions that rival those of countries such as Mozambique or the Philippines (ranking at around the 60th highest GHG-emitting country).

Some pet food constituents have disproportionately high impacts — for example, beef and lamb combined make up just 5% of the total pet food by mass, but, for dry pet-food production, account for around 50% of total associated GHG emissions and 70% of total land use.

The researchers conclude that pet food should be better included in the wider food sustainability agenda. They discuss routes towards sustainable pet ownership (for example, mandatory or market-based incentives to nudge manufacturers and/or pet owners towards less emission-intensive feeding options) and also note that their analysis is limited by only considering the quantity of dry pet food produced globally, whereas in reality pets also consume wet or human leftover foods, which would increase the overall environmental burden of their feed. The economic valuation approach used also does not differentiate between specific ABP products (for example, between pig kidneys and ears), which can vary significantly in value by time and location.

1. EC Product Environmental Footprint Category Rules (PEFCR): [Prepared Pet Food for Cats and Dogs](#).

2. The EC PEFCR on pet food follows an economic allocation approach, which avoids this. See the PEF method for more details: JRC Technical Reports (2019) Suggestions for updating the Product Environmental Footprint (PEF) method: https://eplca.jrc.ec.europa.eu/permalink/PEF_method.pdf