HOW MANY LIVES FOR OUR MEAL? EXPLORING DYNAMICS OF ANIMAL SLAUGHTERING FOR FOOD

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Abstract: *Global meat consumption is reaching impressive levels, with an annual production of 360 million tons. This figure is so large that it is difficult to fully understand. One way to make these numbers easier to understand is to convert them from meat weight to the actual number of animals slaughtered, moving from annual totals to daily numbers. Every day, about 900,000 cows are slaughtered. Regarding chickens, the daily number is even higher – 202 million chickens are slaughtered every day, which is 140,000 chickens per minute. As for fish, the number of fish captured daily is fraught with uncertainty, but it is clear that the numbers are huge, certainly reaching hundreds of millions each day. If people consider the suffering caused by killing these animals and attach ethical importance to that suffering, even to a small degree, the moral impact of this reality is immense.*

Key words*: slaughter, capture, animal suffering, food ethics, impact on the environment.*

INTRODUCTION

The relentless growth of global population and economic prosperity has intensified the demand for meat, causing an explosion in the number of animals raised and slaughtered. According to available estimates, more than 75 billion land animals are slaughtered annually, with a much larger number of aquatic animals captured or raised for consumption [29, 33-35].

This massive industry has significant ecological repercussions, including habitat degradation, loss of biodiversity, and greenhouse gas emissions that contribute to climate change. In addition, the intensive use of resources such as water and agricultural land for feed production raises severe sustainability issues [21,39]. These are amplified by the indirect impacts of deforestation, soil erosion, water and air pollution, issues that require urgent attention in the global environment and conservation discussions [36-39].

In addition to the ecological impact, there are considerable ethical issues related to the conditions in which these animals are raised and slaughtered. Many of the current intensive farming and slaughtering practices do not respect the principles of animal welfare, causing significant suffering. [1,38] This raises questions about the morality and ethics behind our eating habits, prompting society to reevaluate and look for more sustainable and ethical alternatives, such as plant-based diets or reducing meat overconsumption.

The ethical issue becomes even more complex when we consider not only the suffering of animals, but also the impact the meat industry has on human communities. [28,20,32] There is considerable inequality in the distribution of food resources, where a significant portion of the grains and soybeans grown globally go to feed animals, not to alleviate human hunger. [2,3] This aspect raises issues of food ethics, calling into question the responsibility and priorities of our societies in the context of global food security.

Every day, millions of animals are slaughtered to meet the global demand for animal food products. This reality, although often hidden from the public eye, has

profound implications not only for animal welfare, but also for human health, social equity and the sustainability of our environment. [4,5,31] (Figure 1)

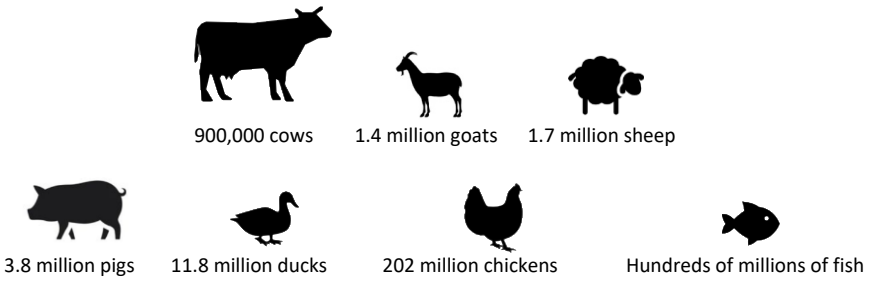

Figure 1. Animals slaughtered daily globally [31]

This article aims to explore in detail the impact of large-scale animal slaughter, analyzing the available data, the environmental and animal welfare consequences, and provide an insight into the future of meat consumption. We will also examine how different cultures approach these issues and how social perceptions influence policy and practice. In doing so, we aim to open an informed and constructive dialogue essential to addressing one of the most pressing ethical and environmental dilemmas of our time, including the ethical implications of our food choices.[1,28,30,32]

MATERIALS AND METHODS

In order to carry out this study, we adopted a comprehensive approach of collecting, researching and analyzing external data from secondary and tertiary sources, internationally recognized. These include prestigious databases and organizations such as Our World in Data at Oxford University in the UK, the Food and Agriculture Organization (FAO) in Rome, Italy, and the World Health Organization (WHO) in Geneva, Switzerland. These entities provide up-to-date and verified data that reflects the current state of the slaughterhouse industry globally. [10,13,14]

We accessed and analyzed relevant scientific publications in the field of animal slaughter, using the main international scientific databases such as Scopus, Web of Science, PubMed, ScienceDirect and Google Scholar. These platforms allowed us to identify the literature and extract studies that discuss both technical and ethical aspects of slaughter.

The methodology included:

*Identification and selection of data.*We filtered and selected the data based on their relevance to the study's themes of interest, such as the number of animals slaughtered, slaughter methods and their impact on animal welfare and the environment.

*Quantitative and qualitative analysis.*Quantitative data were analyzed to determine the volume of animal slaughter, broken down by species (cattle, goats, sheep, pigs, ducks, chickens, fish). In parallel, we conducted a qualitative analysis of the impact of these practices on animal welfare and sustainability.

*Synthesis of information.*Integrating and comparing data from various sources to obtain a complete and multifaceted picture of the subject being studied.

By using these methods, our study aims to provide a broad and scientifically based perspective on the dynamics of animal slaughter for food purposes and the impact of this phenomenon at the global level. This approach allows us not only to understand the scale and complexity of the slaughter industry, but also to identify possible solutions and ethical alternatives that could improve the living conditions of animals and contribute to a more sustainable future. [6,9,11,15]

RESEARCH RESULTS

In today's context, where the sustainability of global food practices is increasingly a topic of discussion, understanding the dynamics between the growing human population and meat consumption becomes essential. The analyzed data provides a detailed historical perspective on the evolution of the slaughter of land animals for meat, compared to the growth of the world population over six decades, from 1961 to the present day.

Analysis of the data highlights not only the changes in the volume of meat production, but also the impact of these changes on our planet's resources and on how our societies adapt to the ever-changing nutritional demands. Analyzing the data facilitates understanding of long-term trends and highlights the challenges posed by the continued increase in the number of animals slaughtered in relation to the human population.

Therefore, Table 1 not only documents these changes, but also serves as a crucial reference point for future discussions related to sustainable food policies, natural resource management, and the ethics of meat consumption. The analysis we propose for consideration reflects not only the statistical aspects but also their wider implications for society and the environment. [3]

Table 1.

The Global Evolution of Animal Slaughter for Meat in the Context of World Population Growth

Specific./ Year	Total number of land animals slaughtered for meat per year (bil.)	World population (bil.)	Number per capita of land animals slaughtered for meat per year (no.)
1	2	3	4
1961	8.61	3.07	2.81
1962	8.94	3.13	2.86
1963	9.39	3.20	2.94
1964	9.70	3.27	2.97
1965	10.39	3.34	3.11
1966	10.63	3.41	3.12
1967	11.58	3.48	3.33
1968	11.94	3.55	3.37
1969	12.63	3.62	3.49
1970	13.60	3.70	3.68
1971	14.09	3.77	3.74
1972	14.93	3.84	3.88
1973	15.50	3.92	3.95
1974	16.04	4.00	4.02
1975	16.29	4.07	4.00
1976	17.25	4.14	4.16
1977	18.24	4.22	4.33
1978	19.35	4.29	4.51
1979	20.71	4.37	4.74
1980	21.75	4.44	4.89
1981	22.78	4.52	5.03
1982	23.49	4.61	5.10
1983	24.07	4.69	5.13
1984	24.51	4.78	5.13
1985	25.52	4.86	5.25
1986	26.75	4.95	5.40
1987	28.63	5.04	5.68
1988	29.72	5.13	5.79
1989	30.17	5.22	5.78
1990	31.67	5.32	5.96

Table 1.*(cont.)*

1	2	3	4
1991	32.75	5.41	6.06
1992	34.06	5.49	6.20
1993	35.76	5.58	6.41
1994	37.27	5.66	6.58
1995	39.63	5.74	6.90
1996	40.62	5.83	6.97
1997	42.15	5.91	7.14
1998	43.16	5.99	7.21
1999	45.38	6.07	7.48
2000	47.04	6.15	7.65
2001	48.63	6.23	7.80
2002	50.31	6.31	7.97
2003	51.16	6.39	8.00
2004	52.15	6.48	8.05
2005	54.65	6.56	8.33
2006	55.51	6.64	8.36
2007	58.78	6.73	8.74
2008	61.36	6.81	9.01
2009	63.22	6.90	9.16
2010	64.67	6.99	9.26
2011	66.43	7.07	9.39
2012	67.85	7.16	9.47
2013	68.82	7.25	9.49
2014	70.33	7.34	9.58
2015	72.63	7.43	9.78
2016	74.13	7.51	9.87
2017	77.40	7.60	10.18
2018	78.75	7.68	10.25
2019	81.29	7.76	10.47
2020	82.72	7.84	10.55
2021	83.58	7.91	10.57

Source:[29,32]

There is an exponential increase in the number of animals slaughtered over the six decades. In 1961, the number was under 10 billion, while in 2021 it has reached about 83 billion. This reflects a massive intensification of industrial meat production to meet increased global demand.

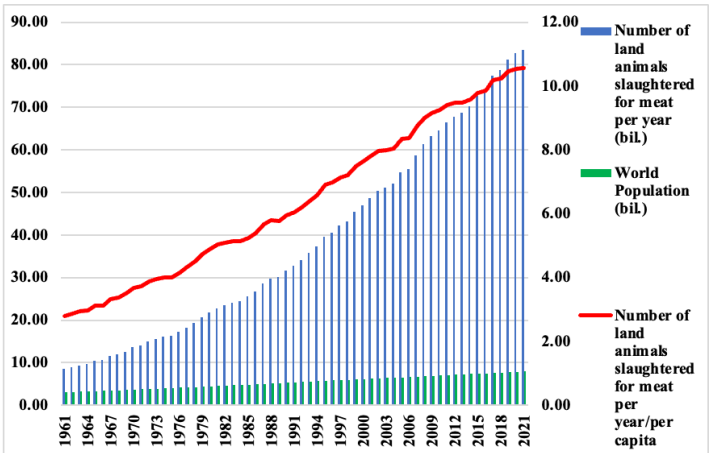

Figure 2. Dynamics of the increase in the number of slaughtered animals per capita, globally

There is a steady increase in world population, from just over 3 billion in 1961 to almost 8 billion in 2021. This underlines the increasing pressure on natural resources and the need to produce more food, including meat.

It is also significant throughout the analyzed period, the fact that the consumption of meat per capita increased considerably. In 1961, each person consumed an average of about 2.81 animals per year, while in 2021, this number has increased to over 10.5 animals per year. This reflects changes in global diets, with an increased preference for animal protein.

CONCLUSIONS

After analyzing data on animal slaughter for meat production and its correlation with world population growth and per capita consumption, it is clear that current trends have profound implications for ecological sustainability, food security and public health globally. [8,24,26]

The exponential increase in the number of animals slaughtered for meat consumption puts enormous pressure on ecosystems. Massive deforestation to make way for pastures and fodder crops is eroding biodiversity and disrupting ecological balances. [18,20] Moreover, intensive animal husbandry methods contribute significantly to greenhouse gas emissions, comparable to those of major industrial sectors. Intensive agriculture also requires extensive use of water and soil resources, leading to land degradation and depletion of natural resources. These trends highlight an impending ecological crisis that requires an urgent reassessment of industrial practices and a pivot to sustainable alternatives, such as promoting plant-based diets and reducing the metabolic risk generated by overconsumption of meat. [22,24,27]

Although meat production has been stepped up to meet increased global demand, the uneven distribution of food remains a major problem. Poor regions continue to face a lack of access to essential nutritional resources, while developed countries face metabolic waste through overconsumption of meat. [7,12] This inequitable distribution suggests that simply increasing meat production is not a viable solution to eradicating global hunger. Instead, an approach is needed that includes improving food distribution systems, reducing food waste, and ensuring equitable access to food for all populations.

The increase in meat consumption has been associated with significant cultural changes, particularly in developing countries where diets are rapidly westernizing. [16,19] This dietary change brings with it an alarming increase in the incidence of lifestyle-related diseases such as cardiovascular disease, type 2 diabetes and certain cancers, which are exacerbated by excessive consumption of processed and red meat. It is crucial to promote health education and implement public policies that encourage healthy and balanced diets, including promoting the consumption of fruits, vegetables and alternative proteins. [17,26]

So the data and trends presented in this research make it clear that it is imperative to rethink our relationship with meat production and explore sustainable solutions that protect the planet, ensure long-term food security and promote a healthier future for all.

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