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Review Article

Intensive Livestock Farming has no Place in Political Economy. Only Marxian Formulas Endure Instead Human Cruelty Dominates

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Abstract

Intensive livestock rearing represents one of the most destructive forms of production and consumption. This is examined through the lens of Political Economy to determine if an explanation can be offered; however, the fundamental analytical tools of Political Economy do not match with this complex reality.

By applying Marxian analytical concepts, one can draw parallels between the exploitation of animals and that of workers, both of which are rooted in the extraction of surplus value rather than profit. And, when profit are low, prices tend to follow suit.

How, then, can low prices coexist with the global rise of intensive farming? The answer lies in consumer behavior: attracted by low prices, consumers continue to purchase products from intensive farming, often disregarding the harm this causes to both their health and the environment. If the recent developments of Civil Economy gain traction, they could offer tools to shift consumer habit and improve the conditions of animals. These conditions, as documented by courageous whistleblowers, reveal that cruelty is rampant in intensive farming.

Keywords: Livestock Farming; Political Economy; Dominates; Marxian; Cruelty

Introduction

Intensive livestock rearing represents one of the most destructive forms of production in terms of human health, the environment and animal welfare [1]. The purpose of this essay is to see if a theoretical match can be found in traditional political economics. To this end, we first define the characteristics of intensive livestock farming and then recall the supply and demand fundamentals of the theory and compare them. We start with the characteristics of intensive livestock farms, which are their large size and pharmacological progress, then we consider how they operate and we realise that they rely on crops (of grain) that go to animals and not to humans (who are starving in the world) and that they carry the germs of very serious diseases for the consumer. By comparison, economic theory is based on the utility function, income and social rivalry, which do not explain, except for the last one, the social and non-economic motivations of demand. The same comparison arises with regard to supply. Here, too, the theoretical cornerstones of scarcity (Robbins' theory) and entropy (Geogescu Roegen's view) have no match whatsoever with the boundless presence of animals in intensive livestock farms and the unremedied damage they cause (pollution, disease, deforestation). The production function of the one- and two-factor economic theory (isoquantum), the marginal rate of substitution, do not explain the production and sale of animal food at very low prices. Marx's discovery of a commodity that has both use and exchange value and the surplus value and profit rates explain the very low level at which intensive live- stock farmers can sell their products. It is the very exploitation of animals and workers that Marx himself indicated how to overcome but which livestock farmers persist in applying because demand gives them reason to do so. It is precisely here that we see the fundamental role of demand, which confirms the convenience of intensive livestock farms, keeps them in operation and, without regard for how they

operate, contributes to the persistence of barbarism against animals. If economic theory were to clothe itself in the newformulation of Social Economy, recently established, intensive live- stock farms would have to be banned based on the ethical and civic landscape of theory and practice. They are a disgrace to humanityas revealed by the investigations reported in the final part of this essay and should be repugnant to the conscience of consumers.

Intensive livestock farms: history and characteristics

Intensive livestock farms originated in the USA from the transformation of munitions factories into artificial fertiliser factories after the Second World War. "Pesticides derived from wartime nerve gas were thus used against the new enemy: the insects of the countryside" [2]. In turn, the UK with the "Agricultural Act" of 1947 approved government support for mass (food) production using chemicals and pharmaceuticals. Largescale and artificial products, including antibiotics and hormones for livestock, thus entered agriculture in their own right as Rachael Carson had first exposed in *Silent Spring in* 1962. Furthermore, animals were con- verted into food-producing machines, or *Animal Machines*, as Ruth Harrison called them in her 1964 book.

But the system of intensive livestock farming had its origins in the 1860s and 1870s with the invention in Chicago of the assembly line on conveyor belts for slaughterhouses and cold rooms for transporting slaughtered animals. Rifkin [3] recalls how Henry Ford was openly inspired by these innovations for his car factories [4].

With these transformations, the world of natural agriculture and stable farming had been supplanted by intensive livestock farms with their unlimited size and pharmacological progress. This has not resulted in the spread of human welfare as hypocritically trumpeted by its devotees but rather its "Ecocide", to use Rifkin's definition [5].

Indeed, intensive livestock farms do not produce food for human prosperity but make use of cages and poisons and procure disease and pollution against a backdrop of unspeakable animal suffering. They distort typical economic activities with quite unusual aspects, which are considered here starting with the *size*. In all productions, the expansion of facilities leads to lower and lower marginal and average costs, as shown by an envelope curve [6]. But in intensive livestock farming, larger dimensions are not synonymous with the greatest possible space, but rather with the most compressed intervals possible, because animals, as opposed to ma chinery, can be kept shoulder to shoulder, eliminating distances. Paradoxically, the large size in intensive livestock farming is based on the elimination of space. The sheds, where animals are confined everywhere in the world, only allow them to stand if they are cattle, pigs, sheep or not to spread their wings if they are hens or not to swim if they are fish. It is called rationalisation of space but it is a falsehood because sows, for example, who have just given birth to piglets often suffocate them precisely for lack of space and this is not economic but just cruel.

Even *technical progress, the* typical spring of economic development, in intensive livestock farming is not a harbinger of improvement but is technically limited and distorted. In fact, it does not consist of much more than mechanical milking, mass distribution of feed, and conveyor belts for manure. Instead, it is diverted towards the use of drugs and antibiotics and the practice of mutilation (without anaesthesia) of piglets' tails and hens' beaks (to avoid aggression due to stress). The use of chemistry and pharmacology in economic production has a tradition going back at least to the analyses of theorists such as J. v. Liebig (*Chemistry in its Application to Agriculture and Physiology*, 1843) and J.F.W. Johnston (*Lectures on Agricultural Chemistry and Geology*, 1847); these, influenced by the Ricardian theory of the decreasing fertility of the earth, argued for the possibility of counteracting it by resorting to synthetic fertilisers. But these were theories concerning agriculture, not livestock farming. On intensive livestock farms, the use of chemistry and pharmacology in animals makes this practice particularly artificial and dangerous because it distances these beings from their natural world and because it makes them toxic: indeed, the use of hormones (fortunately banned in the EU) produces an increase in the animals' body mass, the use of antibiotics allows their immunisation from contagion (given how close they are to each other), but at the same time they are extremely harmful to the humans who eat them. Indeed, consumers ingest all the pharmacological harmfulness assimilated by the animals and not disposed of in faeces. And filling these animals with drugs is certainly neither economic nor human progress

While the distortion of economic concepts is evident in the inap propriate emphasis on large-scale operations and the overuse of

chemicals and drugs, it becomes especially alarming in the harmful practices surrounding intensive livestock farming: in these factories of torture for animals lurks a fatal destiny that is a source of very serious diseases for humans and pollution for the environment. No type of economic production gets close to the harmfulness caused by food production from intensive livestock farms. It is a sick system that produces diseases as denounced in this paper. But people pretend not to know this despite initiatives, investigations and documentaries that have even reached the European Parliament (22nd February 2024 in preview). This is the case of the docufilm "Food for Profit" of 3rd March 2024 by the journalist Giulia Innocenzi and the director Paolo D'Ambrosi, shot with the support of the LAV (Anti-Vivisectionist League), Animal Equality ITALIA, the CIWF (Compassion in World Farming). This courageous film [7] denounces the links between meat lobbies, political interests and the PAC (which subsidises intensive livestock farming with almost 20 % of the total EU budget). It was presented on 5th May 2024 on Rai3's "Report", on Radio DEEJAY, in major Italian cities and received an award on 11th June 2024 at the CinemAmbiente Festival. For his part, Jonathan Safram Foer has been denouncing human indifference to what happens in intensive livestock farms and the resulting climate crisis since 2009, [8] but ten years later [9] he is forced to repeat himself. And consumption continues in its self-destructive path and the legislative systems in their inactiv-ity. When even modern means of information are no longer suf- ficient, we are forced to ask what has become of the "*civilisation*" that Romagnosi handed down to us? [10].

We frequently experience recourse to economic theory to explain what consumers demand and what producers offer. The rebound of responsibility is common practice, but in the case at hand, one can only argue that Political Economy has nothing in common with the distortions of intensive livestock farming. This is evidenced by pointing out how both demand theory and supply theory provide no doctrinal support whatsoever for the nefariousness of factory farming.

The reality of animal food consumption compared with the economic theory of demand

If, after the Second World War, it had seemed that the world was moving towards more democratic, more pacifist, more educated forms of life, it had made a big mistake. It is true that nations had equipped themselves with constitutions or had reinvigorated their already existing ones, that for almost seventy years there have been no wars in Europe except local ones, that school systems had been open to greater integration (Erasmus programme in the lead), but in the meantime a sneaky factor of regression had made its way in: meat consumption. Rifkin goes so far as to say: "Among nations, entry into the 'steak circle' represents increased power and, from a geopolitical point of view, has the same importance in determining one's place in the world as the number of tanks and warships or the growth of industrial production" [11].

This prominence of meat consumption has been accompanied by at least two processes that are both fatal: (A) the division of the world into rich meat-eating countries and poor countries destined to starve, (B) the proliferation of very serious and/or fatal diseases.

The (A) division between rich and poor has always existed in the world in varying degrees; colonialism has been the most widespread weapon of prevarication besides wars of conquest. Poverty and malnutrition have also had different causes over the centuries; here we consider the form of exploitation currently associated with the use of land to cultivate cereals to feed livestock on intensive livestock farms and not for human consumption. As testified by various reports and studies: "Every year, between 40 and 60 million people in the world die of starvation or malnutrition-related diseases. The most severe toll is paid by children" [12]. And malnutrition is particularly due to the fact that cattle are no longer fed with fodder, as they used to be, but with soya and cereals, thus diverting them from human consumption. For example, seventy percent of the grain produced in the US is used for animal feed, but even in Third World countries, millions of hectares of land are used exclusively to produce fodder for European cattle. In the EU, 70% of agricultural land is allocated to the production of animal feed instead of producing food for people [13]. Today, the conflict in the Ukraine is hitting the grain and maize production sector hard, raising its price dramatically. The IPCC predicts that if things do not change, 183 million more people will go hungry by 2050, but already today while the rich in North America, Europe and Japan consume grain-fed cattle, the poor in Latin America, Asia and Africa are starving [14].

The consumption of food from intensive livestock farms causes, as we have just seen, dramatic inequalities at a global level between those who can afford it and those who cannot, while at an individual level is the source of very serious diseases (B). The problem is addressed with controversial opinions and endless polemics since the interests involved are many and all conflicting. In Italy, Accademia Nazionale di Agricoltura and Confindustria are denialists and clash with animal rights activists. To settle these very serious debates, international medical bodies intervene with their expertise. The World Health Organisation (WHO) has by now irrefutably clarified

that red meat (Group 2A: beef, pork, lamb, kid, horse) is potentially carcinogenic, while processed meat (Group 1A: sausages, cold cuts, sausages, hamburgers, frankfurters, bacon) is definitely carcinogenic. The IARC considers white meat (poultry and rabbit) probably safer. The WORLD CANCER RESEARCH FUND distinguishes between individuals with a family history of colon cancer and individuals who do not have it and claims that the former group is 16% more likely to get colon cancer if they eat processed red meat. The HARVARD SCHOOL FOR PUBLIC HEALTH reports the risk of heart attack and diabetes for those who consume processed meat. Cooking is also responsible for diseases of the stomach, intestines, liver and bladder: a study published in 2011 by the BRITISH JOURNAL OF CANCER highlighted the danger of colon cancer in those who eat grilled or overcooked meat. But not only colon cancer lurks in red meat consumption, but also increased cholesterol, LDL lipoproteins, cardio-vascular risks, atherosclerotic plaques, gout, and osteo-articular and renal complications. And not to be forgotten are zoonotic diseases caused by infections that are widespread among animals. The most common ones go by the name of: Campylobacter, Salmonella, Listeria, Escherechia Coli (*E. coli*). In Janu ary 2024, EFSA published a scientific opinion on the dangers of microbiological contagion both in the production of food of animal origin and in the environments where it is processed.

In the light of what has been said about the reality of today's consumption of meat from intensive livestock farms, the reconciliation with Political Economy is rather difficult. In the History of economic thought, consumption has, like all economic variables, been profoundly elaborated, which does not fit in well with today's consumerist practices. This comparison is studied below.

The theory of demand, neglected by the Mercantilists interested in international trade, by the Physiocrats focused on agricultural production, and by the Classicists intent on constructing the theory of labour value, finally finds its analytical codification in the theory of marginal utility. To this economic variable three different authors from three different countries simultaneously devoted three almost identical works: Jevons and Menger in 1871, Walras in 1874. The leading concept of this analytical convergence is that of utility which expresses the relationship between needs and goods. It is a difficult relationship because needs are subjective and goods objective; it is overcome by managing to quantify the satisfaction gained from consumption by relating it to the quantity of goods available. This calculation makes it possible to use the concept of function and to write that utility depends on quantity in a systematic way and according to the law of decreasing need, thus: U = f(q). Gossen [15] refines this relationship radically by levelling out the time available (for consumption) by distributing it among different needs until their equal satisfaction is achieved. This is the optimisation of well-being performed by rational individuals, and the comparison with today's meat consumption is almost pathetic. Suffice to say that in Italy alone 237 gr of meat is consumed per person per day, [16] in the United States and Australia 120 kilos per capita per year, in developed countries 76 kilos, in emerging countries (including China) consumption is increasing along with income, in Africa and South Asia it is very low [17].

To follow the trend of these data would require a separate essay while here it is of interest to see whether or not the demand for meat follows utilitarian motivations. Indeed, these data demonstrate the dependence of consumption not on utility but on income. The utility of meat is only supported by those doctors and consumers who extol the properties of meat against all evidence to the contrary, as indicated above. And below we see that income, one of the basic variables of Political Economy, like utility is not followed in its analytical dynamics by the reality of intensive livestock farming.

The dependence of consumption on income is the lesson of J.M. Keynes [18] that allows the utility function to be rewritten by increasing it by the second independent variable as follows: C=f (U, Re). Given the relationship between consumption and the quantity of meat demanded, there would thus seem to be consonance between the reality of the demand for meat and income theory, but this is not the case. One of the reasons for Keynes' greatness lies in his having shown that as income increases, and once all of it has been expended in consumption, the propensity to consume decreases while from this point the propensity to save is triggered and grows; the former decreases without ever cancelling itself out, the latter grows without ever exhausting all income. This is exactly the opposite of what happens with the demand for meat from intensive livestock farms. Savings dynamics aside, we can see that the amount of meat produced by intensive livestock farms, and then consumed, does not decrease with a certain income; on the contrary, it always increases both individually and globally. This is further proof that there is no consonance between the reality of meat demand and economic theory.

And for demand to increase, meat producers lower the price of meat. This is pure economic theory because it reflects Marshall's analysis set out in his *Principles of Economics* of 1890 [19]. and called 'elasticity of demand' in its three cases of elasticity, anelas-

ticity and inelasticity. The first case aptly describes the demand for meat from intensive livestock farms that increases proportionally as the price decreases. Unfortunately, this is made possible by the torture inflicted on animals in intensive farming: the more animals are exploited (as analysed below), the lower the production costs and, consequently, the lower the price. But Marshall did not carry out his analysis by theorising production through torture.

In its historical development, economic thought evolved from purely analytical considerations to the openness and inclusion of historical-sociological elements. Exactly ten years after the fantastic "years of high theory", as Shackle [20] calls them, Duesenberry's [21] work goes on the attack on demand theory, hitherto based on objective and measurable variables, and claims the role of neglected psychological and sociological motives. He argues that an 'increasingly high standard of living' drives consumers to procure those goods that testify to their place on the social ladder by demonstrating their prestige. Duesenberry calls this behaviour the "demonstration effect" and credits Veblen [22] with inspiring the concept. After him, economic theory no longer neglected psychological variables, starting with Kahneman and Tversky and their *Theory of Perspective*, [23]. Brunswick with his "theory of lenses", [24] one psychological the other sociological, and all the American Institutionalists. This line of thought finds its terminus in H. A. Simon who theorises the "bounded rationality" of the consumer [25]. It is precisely with Simon that one can explain much of the misinformation and emotionalism of the contemporary consumer of meat from intensive livestock farms. Consumers are at the mercy of health prejudices, bamboozled by meat producers' advertising, obsessed by the "steak myth" and the pursuit of social prestige is the living confirmation of today's consumer. But the theories that describe such consumers are psychological, sociological, historical environmental and not economic.

The reality of animal food production compared with the economic theory of supply

If Economics is the science of scarcity or rather, as Lionel Robbins writes, [26] the science that studies the distribution of scarce means to alternative ends, intensive livestock farming is not among its objects of investigation. The means at the disposal of intensive livestock farms are in fact an immense number of animals that know no scarcity, in part because artificial insemination [27] continually renews their abundance. The figure of 70 billion animals used in the world by intensive livestock farms to produce food for humans shows no sign of decreasing; on the contrary, it is on the rise thanks to China. And there is no shortage of workers either, recruited as they are from among the unskilled, the unemployed, migrants and drug addicts. In Europe they come from India, Ghana and China, but also from Eastern Europe, the Balkans, North and Central Africa and East Asia. They are paid very low wages, often off the books, provided by "spurious" cooperatives instead of regular trade unions, they work twelve-hour shifts and many are without health insurance and live in overcrowded accommodation. In slaughterhouses, the hours worked are far greater than those declared. In the transport of live animals, pay is in proportion to the speed at which live animals are loaded onto trucks every hour. This is typical worker exploitation [28].

Paradoxically, GeorgescuRoegen's concept of entropy does not even account for intensive livestock farming, despite its significant environmental impact [29]. Following the second principle of thermodynamics, at the end of each production process "the quality of energy always deteriorates" and intensive livestock farms with their pollution rate could be emblematic of this. Repeatedly denounced by many, but never sanctioned, intensive farmers continue their activities undisturbed without the slightest reprimand. "The environment is polluted by greenhouse gases from intensive livestock farming (i.e. animal waste), which account for 17% of all emissions from cars and vans and 24% of total emissions"; "in turn, animal facies, which are not disposed of as in the past through pastures but are moved by conveyor belts into stagnant puddles outside the sheds, pour nitrogen and phosphorous into the rivers and seas that they manage to reach, especially if it rains. The greenhouse effect and acid rain are attributable to intensive livestock farming, but deforestation is also caused by them. In Brazil, the Amazon rainforest is being destroyed at a frightening rate and in Argentina, 200,000 hectares of soil are razed to the ground every year to make way for soya and palm oil crops, which are the most common animal feedstuff in intensive warehouses" [30]. Considering that tropical forests, which cover just 6% of the Earth's surface, are home to 50% of the world's animal and plant species, they face a significant risk of extinction due to deforestation and intensive livestock farming, as Lymbery highlights [31]. It is evident that the supply chain driven by intensive livestock farming only nominally aligns with standard production processes, as it diverges from them in almost every aspect. Unfortunately, issues like air and water pollution, along with deforestation, seem to concern only animal welfare organizations and a few conscientious scholars.

It is almost disheartening to observe that in Economics, we often focus on production functions with graphs and formulas, analysing the diminishing returns of a single-factor model or the mar-

ginal rate of substitution (MRS) in a two-factor isoquant to identify the most efficient combination of resources. In stark contrast, the logic behind intensive livestock farming operates on entirely different principles. These farms prioritize minimizing costs for both animals and workers, disregarding productivity, and instead exploit them without replacement, as animals are treated merely as factors of production. In reality, they should not be considered as such, given the brutal conditions they endure on these farms. The combined use of animals and workers does not follow the logic of isoquant functions but rather a singular goal: maximizing sales at the lowest possible prices. And how are these prices achieved? Where does their theoretical explanation lie? Only recourse to Marx's analysis can explain it.

The Marxian explanation of use-value, exchange-value, surplus-value and price

The great novelty of Marxian thought consists in the discovery of a commodity that has both use value and exchange value [32]. This is the human labour power that we compare here to animal performance because animals like workers on intensive farms areproducers of both a subsistence quantum and a surplus due to sales.The subsistence of workers and animals can be called "use-value" and serves both to survive. In the M-D-M process, the commodity(M) is exchanged for money (D), which serves as an intermediary in an exchange of equal values. Here, the wage serves the subsistence of both the workers who sell their labour power to survive and the animals who are fed with grain and drugs just to stay alive (rather than adequate fodder). But in addition to production, there is distribution or exchange and the process that describes it is D-M-D'; here we see that D' is greater than D so that if it were not so there would be no reason for exchange; in this second process workers are made to work long unpaid hours besides subsistence wages. In Senior and Marx's time [33] it was twelve hours of work a day; in intensive livestock farms animals are always available; chicks, for example, are kept in constant bright light so that they think it is daytime, eat constantly and fatten up in the shortest possible time. At this stage of distribution, the "exchange value" is formed, showing that surplus value (p) is not due to production but to sale; surplus value (*p*) is exploitation of both workers and animals; being formed in exchange, its essay (*p'*) is the ratio of surplus value to variable capital (*v*) thus : *p'=p/v.* For Marx, capital (*C*) is composed of two parts: a constant one *(c*), which serves to provide the machinery and raw materials necessary for production and a variable one (v), which serves to pay the workers, so the "organic composition of capital" (*C)* is their sum thus: *C= c+v.* Profit *(pr)*, unlike surplus-value, is related not only to v but to *c+v* and its rate is written thus*: pr'=p'/c+v* . It is inversely proportional to the organic composition of capital such that if c increases, due to the increase in capital endowment, pr' decreases. In intensive livestock farms, the role of capital differs from Marx's theory, where he viewed it as a crucial force driving systemic evolution and development. Instead in intensive livestock farms capital is invested only in tools to mechanize livestock rearing, thus capital involvement is minimum. As a result, the exploitation of animals aligns more with the surplus value rather than with the profit. Given that surplus value (p) increases the more animals and workers are exploited, the rate of surplus value p'= p/v increases if the numerator increases.

In the formulae of both the rate of surplus-value (p' = p/v) and of profit (pr' = p/c+v) the variable capital, v, appears, so it is convenient to follow the trends of this variable. In the M-D-M process when workers and animals have use-value, if v decreases, p' increases; this means that it pays to keep workers at subsistence level by paying them very little and to feed the animals with soy and grain and not their own proper feed. In the D-M-D' process, when workers and animals have an exchange value (v), an increase in v results in a decrease in profit (pr'), as constant capital (c) plays a minimal role in intensive livestock farming. This suggests that when workers and animals are considered primarily as having use value, surplus value is high; however, when they are assigned exchange value, the profit is low.

If the selling price follows the trend of profit, it inevitably remains low, which explains the being low of products from intensive livestock farming. But how, then, do we account for the industry's peak success? The answer lies with consumers who, driven by low prices and social aspirations, continue to consume relentlessly. As global demand grows, it becomes evident that many consumers choose to ignore the exploitation of workers and animals-the lack of proper equipment, job qualifications, and the resulting neglect, disease, and suffering. Despite this, they continue to purchase animal-based products. If consumers fail to not only change their tastes but also their ethical stance on consumption, and if they do not take responsibility for the horrific conditions of intensive livestock farms, they will contribute to the destruction of human health and the environment.

New directions in Political Economy and old scourges of intensive livestock farming

Since 1765, with the publication of Antonio Genovesi's *Lezioni di Economia Civile* (*Lectures on Civil Economy*), Economics has had the potential to follow a model focused on more than just the pursuit

of commercial interests, capital sovereignty, and social ambitions. Although various attempts to put into practice Genovesi's teachings have been made over time, they largely remained unsuccessful. These efforts culminated in the founding of the School of Civil Economy (SEC) in 2013 in Burchio, near Florence, in collaboration with European cultural associations such as NEXT and ESER. They all pursue the goal of solidarity, reciprocity and fraternity. On 29th September 2023, the same European Commission encouraged the EU Council to propose the *Recommendation on the Development of Framework Conditions for the Social Economy* to Member States, aimed at creating quality jobs, supporting innovation, and fostering social inclusion. Italy's experience with Civil Economy could contribute to these goals by reducing poverty and promoting consumption and production based on non-traditional models. This approach could integrate practical policy measures and economic theory to foster a more civil and responsible approach to economic activities and regulations. There is even discussion of rewriting political economics texts to incorporate these new theoretical and practical frameworks.

Amid all this innovative fervor, what remains conspicuously absent is an explicit reference to intensive livestock farming, despite its profound impact on both human health and environmental well-being. The discrepancy between intensive livestock farming and Political Economy, as explored in this essay, would become even more conflictual if the principles of the new Social Economy could be implemented. Intensive livestock farming represents a direct contradiction to the ideals of a civilized society, making it impossible to reconcile with the values of social and environmental responsibility. The role played by animal trade associations and carnivorous consumer lobbyists in obscuring the realities of intensive livestock farming and downplaying its dangers is well understood [34]. However, the written testimonies [35] and protests by dedicated volunteers should awaken the conscience of consumers. The atrocities committed in intensive livestock farms, slaughterhouses, and during live animal transports are uniquely horrific. These acts are bravely exposed by animal welfare organizations, whose members, often at great personal risk, conduct undercover investigations into the deplorable conditions in the sheds, slaughterhouses, and transport vehicles that subject animals to unspeakable suffering.

Here, we reference testimonies from volunteer operators who have successfully shared the outcomes of their investigations. Though brief, these accounts are deeply distressing, as they expose the grim realities of intensive farms, where animals are stripped of their value as sentient beings, subjected to sadistic mistreatment, and killed without mercy. By consuming these creatures, consumers become complicit in the immense suffering inflicted upon them.

Young people who infiltrate factory farms can see for themselves sows, laying hens, rabbits, geese, and quails locked in cages barely big enough to contain them; there, the sows are forced to give birth after artificial insemination. A well-deserving campaign entitled 'End the Cage Age' went as far as the European Commission, which had promised to open the cages by 2026; having completely forgotten about it, it caused the deadline to expire, leading to an appeal to the Court of Justice. Meanwhile hens continue to have their beaks cut off with red-hot irons and without anaesthesia (to prevent them from injuring each other due to stress) and male chicks (which are of no use to the food trade) will be shredded alive as soon as they are born because the law forbidding it will not come into force until 2026 [36]. Intensive pig farms everywhere are places of torture, and an undercover witness who was in one in Germany for 120 days has reported incidents of limitless cruelty. The mutilation of piglets' tails (to prevent episodes of mutual aggression), although forbidden by law, is regularly practised without anaesthesia, and other episodes of sadism filmed covertly show workers "twisting piglets necks with their bare hands until they snapped... one pig was knocked to the ground with a stick and another was treated in this way and lost his life" [37].

These accounts that recur in many investigations demonstrate the sadism of intensive farm operators that both Foer [38] and Lymbery [39] have written about. These atrocities are commonplace. For instance, in one testimony from a farm in the Mantua area, it was reported that baby pigs were kicked, thrown, and even used as footballs, while adult pigs were prodded and beaten with iron bars on their backs [40]. Another source of suffering is the foie gras produced by force-feeding on all goose farms. Not to be forgotten is the transport of live animals, now banned in the UK, which has been described by an undercover operator employed on an intensive farm in the Veneto region; he writes "during loading for the slaughterhouse ... my colleagues, in order to hurry, grabbed three chickens by the legs with each hand, holding them upside down, and then threw them violently into the transport cages, which contained up to 50 animals each It cost me a lot to pick up the threadof these investigations. but showing everyone what happens in these places is the first step to change things" [41].

No animal is spared by these atrocities, so even rabbits are victims of the atrocities carried out on intensive farms. In order to

find out what happens to these poor animals, we refer to a video recording of undercover investigators who have infiltrated several intensive breeding farms in the most productive areas of the country and learn that rabbits "in the wild can live up to 12 years, while the average life span of a rabbit in a breeding farm is only 12 weeks, brood females live a maximum of 2 years and breeding rabbits 4 years ... usually 600 brood females are entrusted to each breeder, so the time to devote to each animal is only 48 seconds. This means that if an animal dies or falls ill, this is detected many hours later or even the following day ... The young, when fattened, can be crammed up to 7 in the same cage, so the usable space per rabbit is only 450 square cm, less than an A4 sheet of paper! The cages are stacked on top of each other and droppings fall on the animals in the lower cages" [42].

But let us not forget the fish that are kept in underwater fish farms and that "hidden from the gaze of the world" endure among the "greatest causes of suffering on the planet". They are forced "at high intensity inside a net, tank or cage"... confinement that "causes physical injuries, such as fin damage caused by other aggressive animals, and poor physical conditions due to the struggle for food and stress". "Fish are mostly slaughtered without being stunned... and death can be slow depending on the slaughter methods used". If this consists of semi-liquid ice without stunning "it can cause the fish to struggle for 40 minutes and take more than three hours before it dies" [43].

In the face of such horror, only Tolstoy's words suffice: "This is dreadful! Not only the suffering and death of the animals, but that man suppresses in himself, unnecessarily, the highest spiritual capacity-that of sympathy and pity toward living creatures like himself-and by violating his own feelings becomes cruel" [44].

Conclusion

With this essay we wanted to see whether intensive livestock farming finds analytical support in Political Economy: by reviewing the analyses of supply and demand we have seen that they do not explain the reality of intensive livestock farming. These are based on a false dimension that steals space from animals and on an intensive use of drugs that does not replace technical progress as theorised by traditional economics. Intensive livestock farms also make use of a huge amount of cereals that are also diverted from the needs of the starving and cause human diseases ascertained by international health organisations such as the WHO. All this to satisfy a pressing demand. The utility function, the concept of income, the marginal rate of substitution as studied by Political Economy are not applicable to these intensive livestock farming practices.

Even with regard to supply, it can be seen that intensive livestock farming and economic theory follow different paths. Economic scarcity is not found in intensive livestock farming, nor does thelaw of entropy square with the pollution, deforestation and other calamities caused by intensive livestock farming. Only Marx's theory of the exploitation of human labour and source of surplus valuecan be adapted to the abuse perpetrated on animals and explain how the gain from animal food sales is formed. This exploitation enables the low price of meat and encourages consumer demand.

The role demand plays in pandering to the commercial operations of intensive livestock farms to satisfy social ambitions is reinforced by the lack of compassion for what happens on the farm. Disregarding denialist positions, accusations by animal welfare association workers are reported; they undercover venture to witness what goes on in farms inaccessible to the public. This alliance of harmful supply and complicit demand is thus confirmed.

It is not the impossible endorsement of economic theory that allows a polluted system of animal food supply driven by demand to exist. Nor is it the lack of information. It is the lack of human responsibility towards sentient creatures, which no one is allowed to prevaricate, that creates this perverse combination of evil production and consumption at both global and individual levels.

Bibliography

1. In the world 70 billion animals are bred and slaughtered every year, 80% of which come from intensive livestock farms. The countries with the most intensive livestock farms are the United States and Canada; China in 2023 built the largest intensive livestock farm in a 26-storey building. Italy has 400.000,00 intensive farms with 9 million cattle and 8.5 million pigs, mainly in Lombardy, Veneto and Emilia Romagna.

2. LIMBERY P with Oakeshott I. "Farmageddon. The true cost of cheap meat". London, Blumsbury Publishing (2014): 12.

3. RIFKIN J. "Beyond Beef. The rise and Fall of the Cattle Culture". New York, E. F,. Dutton and Co. (1992): 136 -143.

4. FORD H. "My Life and Work" written with Samuel Crowther, N.Y., Doubleday Page and Co (1922): 93.

5. The Italian translation of RIFKIN's Beyond Beef is in fact: Ecocide. Ascesa e caduta della cultura della carne, Milan, Mondadori (2001).

6. PELLANDA A. "All the Production Costs of Intensive Farming: a Graphical Representation". *Medicon Agricultural and Environmental Sciences* 2.3 (2022): 01-03.

7. Second only to the shocking 2018 documentary 'Dominium' about the horrors of factory farming and slaughterhouses. It was made with remote-controlled drones because it is not possible to enter the warehouses of intensive livestock farms to investigate, let alone make films. The cultural association AGIREORA Editions has made it available online free of charge.

8. FOER JS. "Eating Animal". Copyright by J S Foer (2009).

9. FOER JS. "We are the Weather. Saving the Planet Begins at Breakfast". Copyright by JS (2019).

10. GD Romagnosi's lecture on the quest for the moral, political and economic perfection of mankind is delivered with particular analytical/didactic poignancy in *Dell' indole e dei fattori dell' incivilimento con esempio del suo risorgimento in Italia*, Lausanne, Società degli Editori degli Annali dell'Università (1832).

11. RIFKIN J "*Beyond Beef*". (180).

12. RIFKIN J. "Three years earlier is the Report of ONE EARTH, December 16, 2020 on the same issues". See also CIWF Report, 2023 Factory Farming: Who Benefits? How a Ruinous System is Kept Afloat. The Four Myths and the Big Seven Input Providers of Factory Farming.

13. FAO "*Production*" (1989) Yearbook, vol. 43. See also AA.VV., "Food System By-products Upcycled in Livestock and Aquaculture Feeds Can Increase Global Food Supply". *Nature*, *Food* 3b (2022):729-740.

14. FAO, IFAD, UNICEF report. on the "State of Food Security and Nutrition" (2024).

15. GOSSEN HH. "Entwickelung der Gesetze des menschlichen Verkehrs Und des Daraus Fliessenden Regeln fuer Menschlischen Handeln". Braunschweg, Viewers and Sohn (1854).

16. FAO and ISME data disputed by ASPA (Associazione Scientifica per le Produzioni Animali) which, with research by Russo, DeAngeli and Danieli, argues that a distinction must be made between apparent and actual consumption and that all data must be revised accordingly.

17. UN Food and Agriculture Organisation 2020 data.

18. KEYNES JM. "The General Theory of Employment, Interest and Money". London, Macmillan (1936).

19. MARSHALL A. "Principles of Economics". London and New York, Macmillan and Co (1890).

20. SHACKLE GLS. "The Years of High Theory: Invention and Tradition in Economic Thought (1926-1939)". Cambridge University Press (1967).

21. DUESENBERRY S. "Income, Saving and the Theory of Consumer Behavior". Cambridge, Massachusetts (1949).

22. VEBLEN T. "The Theory of the Leisure Class". New York, N.Y., Macmillan (1899).

23. Kahneman D and Tversky A. "Prospect Theory: an Analysis of Decision under Risk". *Econometrica* 47 (1979): 263-291.

24. BRUNSWICK E. "Perception and Representative Design of Psychological Design". Berkeley, University of California Press (1956).

25. SIMON HA. "Behavioral Model of Rational Choice". *Quarterly Journal of Economics* 69 (1955): 99-118. SIMON HA. "Rational Choice and the Structure of Environment". *Psychological Review* 63 (1956): 129-138.

26. ROBBINS LC. "An Essay on the Nature and Significance of Economic Science" (1932).

27. "An example: if in nature a cow lives as long as twenty years and gives birth to seven calves, in intensive farming she lives a maximum of five years and has to give birth to one calf a year. Then, exhausted, the cow is slaughtered", PELLANDA A. "All the Production Costs of Intensive Farming" 7.

28. RIFKIN J. "Beyond Beef". 139-143.

29. GEORGESCU ROEGEN N. "The Entropy Law and the Economic Process". Cambridge, Harvard University Press (1971).

30. PELLANDA A. "Economie di scala e diseconomie negli allevamenti intensivi". Sviluppo Felice.

31. LYMBERY P. "Dead Zone". Where the Wild Were, London, Bloomsbury Publishing Plc (2016).

32. MARK K. "Das Kapital. Kritik des politischen Oekonomie". Band I, Hamburg, Otto Meissner (1867).

33. MARX K. "Das Kapital". Book I, ch. IV, "The last hour of Senior".

34. The most defensive theses of meat consumption in Italy come from three Associations: ASSOCARNI, ASSICA and UNAITALIA that, associated in, created the "Sustainable Meat" project aimed at invalidating claims against intensive livestock farming (2012).

35. GARCIA PEREIRA M. "Ma vie tante crue (Maltrato animal, sufrimiento humano". E books, Place des editeurs (2021).

36. CIWFItaliasupport-ciwf@ciwf.it

37. Matteo Cupi<comunicazioni@animalequality.it >06/08/29024

38. FOER JS. "Eating Animals" 114-15 (2021): 272

39. LYMBERY P "Farmageddon". op.cit 146.

40. Essere Animali <sostenitori@essereanimali.org> 23/07/24

41. idem, 22/09/24

42. https://www.lav.it/news/video-investigazioni -rabbits, 22/09/24

43. https://www.ciwf.it/animali/pesci/gli-allevamenti-intensivi-dei-pesci 22/09/24

44. TOLSTOJ LN. "Pervaja stupen" (1891).