

Review

Consumer Attitudes and Concerns about Beef Consumption in Argentina and Other South American Countries

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Abstract: In South America, modifications in beef consumption habits, mainly related to economic reasons, new lifestyles, and new eating behaviors, are being observed. If this trend continues, beef consumption could continue to fall or there would be a greater share of cheaper types of meat. In general, consumer concerns related to health, animal welfare, and environmental impact are increasing. Most of the population in South America follows an omnivorous diet, with a minority of vegetarians/vegans. In Argentina, around 30% consider themselves as flexitarians and around 5% as vegetarians/vegans, with centennials and millennials being the ones that mostly follow these types of behaviors. For flexitarians, the main reason that leads them to adopt this diet is the search for healthier eating. In general, consumers consider livestock production to be a sustainable activity; although, ethical concerns are growing among the younger generations. Finally, around 30% of the total population is willing to partially replace the consumption of beef to avoid animal slaughter and 8% would abandon it for this reason. The current trend would indicate that, if the conditions defined by the present scenarios continue, the motivations to consume less beef could be strengthened.

Keywords: beef; Flexitarian; sustainable; centennials; ethical aspects



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1. Introduction

Diet changes over time, due to the concurrence of various factors, including people's income, food prices, individual preferences and beliefs, cultural traditions, and geographic, environmental, and social and economic factors that interact in a complex way defining patterns of food consumption [1].

Eating habits are routine patterns of consumption, which represent dynamic behavioral patterns that can be changed based on daily life experiences within the framework of a social and cultural context [2]. These changes can be deepened by situations such as the COVID-19 Pandemic, given the growing concern about food safety, hygienic practices throughout the value chain, and the transmission routes of the virus. Stresses at multiple points in the food supply chain can affect the availability and prices of food in the retail sector. Likewise, variations and uncertainty regarding household income can affect household food baskets, as well as the possible implications of emotional stress derived from food consumption [3–7]. Thus, in the post-Pandemic world, it is necessary to analyze the resilience capacity of food systems and to evaluate whether the changes observed in eating habits remain [8].

Latin America has the resources to meet the growing demands for food, to make a significant contribution to regional and global food security, and to be an important livestock producer. In the last decades, livestock farming in South America has experienced

great growth, making the region a strong exporter of beef and poultry. However, this expansion requires a sustainable approach to avoid further pressure on natural resources and the environment [9].

In this context, addressing changes in consumer preferences and demands represents one of the main challenges faced by countries with a tradition in beef production and export, like several countries from South America that also have high levels of domestic consumption. Knowing how to link the demands of the different markets with the characteristics and particularities of the production systems is currently one of the keys to improving the competitiveness of the value chain [10]. However, the lack of integration in the beef value chain can generate inconsistencies and quality issues that negatively influence efforts to align production goals with consumer expectations.

In Argentina, food consumption patterns derive from the fusion of native and European culinary traditions [11]. Argentina has historically been one of the countries with the highest per capita beef consumption per year. However, in recent years, beef demand has decreased due to economic reasons and changes associated with new lifestyles and eating behaviors [12,13]. In the socio-economic context of Argentina, poverty has been considered a structural problem for more than four decades. This scenario, together with the sanitary emergency due to the COVID-19 Pandemic, has led to an abrupt deterioration in the incomes of many Argentine families. In 2021, an estimated 6.4% of Argentine households and 8.8% of people were indigent, while 33.9% of households and 43.8% of people were below the poverty line. In terms of age, infants and adolescents up to 17 years of age were the most affected by indigence and/or poverty. It has been estimated that, during 2021, 64.9% of infants and adolescents lived in households with incomes below the poverty line and 14.7% in households with incomes below the indigence line [14]. This picture is similar to that revealed by official surveys [15]. In 2022, the report of the Argentine Social Debt Observatory [16] reported an increase of 0.7 points in the percentage of poverty compared to 2021.

In this complex socioeconomic scenario, there has been a progressive modification and diversification of meat consumption in Argentina. While at the beginning of the 2000s, the consumption of beef was 62 kg/inhabitant/year, that of poultry meat was 24 kg/inhabitant/year and that of pork was 6 kg/inhabitant/year, during 2021, the consumption of beef decreased to 47.6 kg/inhabitant/year, whereas that of poultry meat increased to 45.9 kg/inhabitant/year and that of pork to 15.9 kg/inhabitant/year [17]. The decrease in beef consumption can be partly explained by this process of substitution between meat products; although, changes in eating behaviors must also be considered.

This paper presents a narrative review of the consumption habits, attitudes, and concerns of beef consumers in Argentina and other South American countries, following the methodology described by Estévez-Moreno et al. [18]. Different types of information sources were used: data from statistical reports, knowledge from gray literature, and a search of scientific literature performed in digital databases (Google scholar, Scielo, Science Direct, Scopus, and Redalyc), published in English and Spanish. "Quotation marks and Boolean moderators (i.e., "and" and "or") were used to find the relevant literature. The keywords used on the search were "meat", "beef", "consumer attitudes", "consumer concerns", "animal welfare", "sustainability", "health", "flexitarian", "vegetarian", "vegan", and "artificial meat". The main information considered was from 2020 to 2022, but some reference materials in the scope from previous years were also included. Conference abstracts and dissertations, notes, papers presented in congresses, and thesis were included". In the case of Argentina, desk research using secondary data from reports from the Argentine Beef Promotion Institute (IPCVA) (ipcva.com.ar) was conducted [19] and the social and nutritional status of the Argentine population is presented to establish a framework for the study. This review is divided into three main parts. The first part summarizes data on meat consumption at global and regional levels. The second part presents the eating habits and perceptions of consumers in Argentina and discusses the drivers of change in beef consumption, including aspects related to sustainability and animal welfare. The last part

is related to an overview of eating behaviors and perceptions of consumers in other South American countries, in particular Brazil, Paraguay, and Uruguay, which integrate the MERCOSUR (the Spanish initials for “Southern Common Market”), and Chile due to its regional importance and because it imports beef from other countries in the region. The MERCOSUR is a regional integration process, initially established by Argentina, Brazil, Paraguay, and Uruguay, and subsequently joined by Venezuela [20]. Finally, some concluding remarks are made.

2. Meat Consumption at the Global and Regional Level

Meat supply systems play a significant role in the global agrifood economy. As mentioned by Pulina et al. [21], the future of the beef industry is linked mainly to the reduction of the environmental impact in response to the growing concerns and demands of the consumers, together with the improvement in the production yields and the quality of products. The meat industry must also define its role against questions related to the consumption of red meats in healthy diets, within the framework of a sustainable food system. The Eat-Lancet report [22] proposes a medium-term reduction of more than 50% in global red meat consumption. Although the report recognizes the need to frame this reduction with a local/regional vision of nutritional security and the economic impact that this reduction can generate.

Between 1998 and 2018, global meat consumption increased by 58%. During this period, developing countries accounted for around 85% of this increase. The principal drivers were population growth, which accounted for 54% of this increase, changes in world production, and per person consumption growth. Globally, consumer preferences have shifted towards higher consumption of fish and poultry [23]. Per person consumption has been influenced most strongly by changing consumer preferences and income growth [23–25]. Russia, Vietnam, and Peru have shown an increase in per capita meat consumption close to 2 kg/inhabitant between 2000 and 2019. In South America, Brazil, Argentina, Chile, and Colombia have shown an increase in meat consumption per capita of more than 1 kg/inhabitant [24]. In contrast, other countries such as New Zealand, Canada, Ethiopia, Nigeria, Switzerland, and Paraguay have experienced a decrease in the level of meat consumption [24]. A decline in the consumption of beef and an increase in the consumption of other types of meat was observed in these countries, with the exception of Ethiopia.

Data on projected meat consumption during 2020–2029 are shown in Figures 1–4, which were prepared based on the information provided by the OECD on per capita meat consumption [26]. The information is organized according to the type of meat (beef and veal, poultry, pork, and sheep meat) and region (World, Africa, Asia, Europe, Latin America, North America, and Oceania). The 2020–2029 period corresponds to the analysis carried out in the OECD FAO Agricultural Outlook 2020–2029 [27], which considers a base period defined by the average between 2017 and 2019 and presents a reference scenario on the evolution of agricultural and fish commodity markets [27]. Given that, at the time of preparing the present review, the full impact of the COVID-19 Pandemic was uncertain, it was not incorporated into the projections. During the outlook period evaluated, population growth is expected to remain the main driver of total demand for agricultural commodities at the global level. However, for meat and other products (vegetable oils, sugar, and dairy products), the impact of population dynamics is less, since income and consumer preferences play important roles [27].

On the other hand, the increasing consumer health and environmental concerns are expected to lead to a transition to alternative sources of protein (for example, plant-based and insect-based proteins), as well as to the substitution of proteins from red meats towards those from poultry meat and fish. These changes will be particularly pronounced in high-income countries. In low-income countries, the demand for poultry meat will be driven by the affordability of this type of meat compared to that of others, as well as by its health attributes and broad cultural acceptability.

During the 2020–2029 decade, meat consumption is expected to increase by 12% over the base period, but the trend for each type of meat is not homogenous. The 12% increase will be made up as follows: 50% will correspond to poultry meat, 28% to pork, 16% to beef, and 6% to sheep meat. However, medium-term projections suggest a potential decline in per capita meat consumption. The main factors contributing to this decline are the decrease in the rate of income growth in some countries and the ageing of the population. In addition, in high-income countries, the decrease in meat consumption can be associated with changes in dietary recommendations, preferences, and consumption habits of the population [27].”

Regarding beef consumption, an increase is projected in some regions [27]. In the case of Asia, a slight increment of 2.4% is expected compared to the average in the 2017–2019 period, but starting from a low level (3.44 kg/inhabitant). In contrast, in other regions that currently have high per capita beef consumption, consumption is expected to decline in favor of cheaper meats such as pork and poultry (Figure 1).

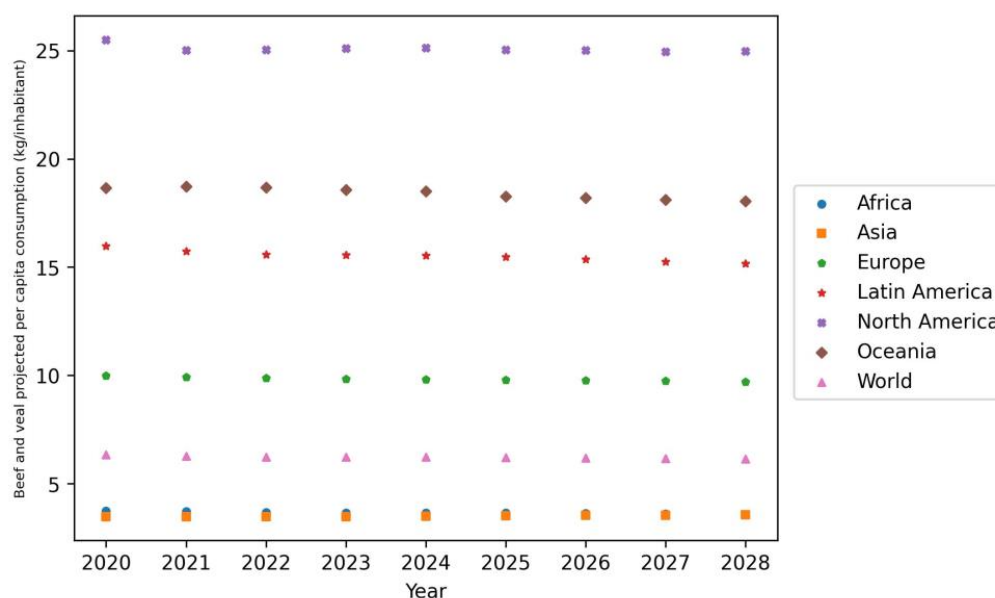


Figure 1. Beef and veal projected per capita consumption in the 2020–2029 period. Source: OECD (2023), Meat consumption (indicator). <https://doi.org/10.1787/fa290fd0-en> (accessed on 5 January 2023). Per capita consumption expressed in retail weight. Carcass weight to retail weight conversion factors of 0.7 for beef and veal, 0.78 for pig meat, and 0.88 for both sheep meat and poultry meat.

The projection of poultry meat per capita consumption for different regions is presented in Figure 2 [26]. Poultry meat consumption is expected to increase globally, with different trends depending on the region. A substantial difference related primarily to income levels is expected to continue over the decade 2020–2029. During the period 2017 to 2019, the average per capita poultry meat consumption for developed countries (expressed as ready-to-cook) was 29.52 kg/inhabitant, while it was 11.06 kg/inhabitant for developing countries.

Regarding pork meat consumption, at the global level, it is projected to increase over the next ten years [27]; the projected per capita consumption is shown in Figure 3 [26]. However, a marginal decrease is anticipated on a per capita basis. This is mainly due to the projected decline in per capita consumption (expressed in retail weight) in countries with large populations such as India and Australia. In addition, in Europe, it is also expected to decline. This is due to the changes in eating habits that favor poultry (over pork), which is cheaper and perceived as a healthier choice [28]. In most of Latin America, due to favorable relative prices, pork consumption has grown rapidly and is expected to continue to do so. In several Asian countries that traditionally consume pork, per capita pork meat

consumption is expected to increase once the impact of African swine fever has diminished. However, other scenarios are possible according to the response of consumers and the market in China [29].

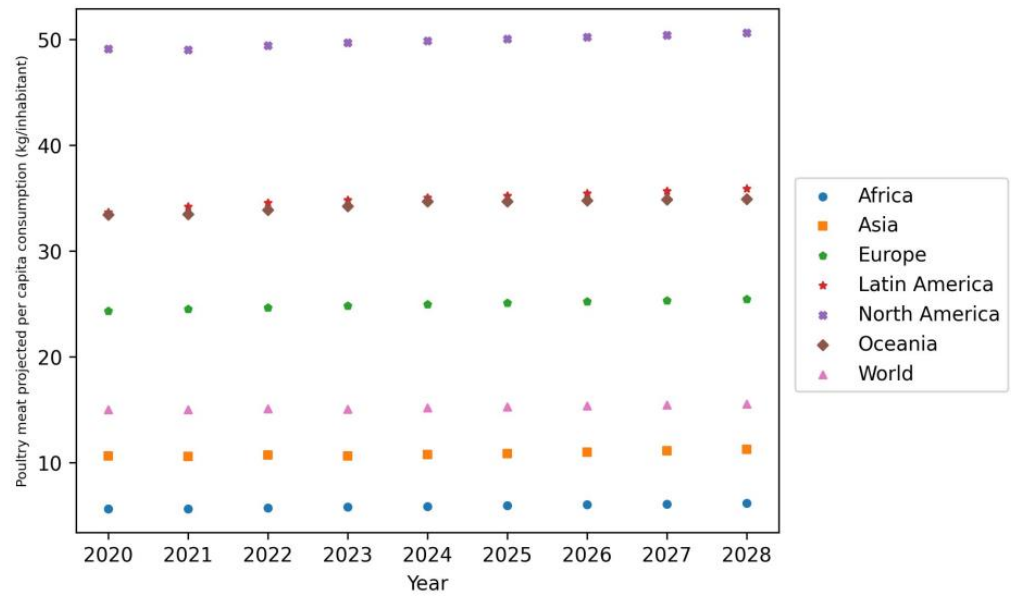


Figure 2. Poultry meat projected per capita consumption in the 2020–2029 period. Source: OECD (2023), Meat consumption (indicator). <https://doi.org/10.1787/fa290fd0-en> (accessed on 10 January 2023). Per capita consumption expressed as ready to cook. Carcass weight to retail weight conversion factors of 0.7 for beef and veal, 0.78 for pork meat, and 0.88 for both sheep meat and poultry meat.

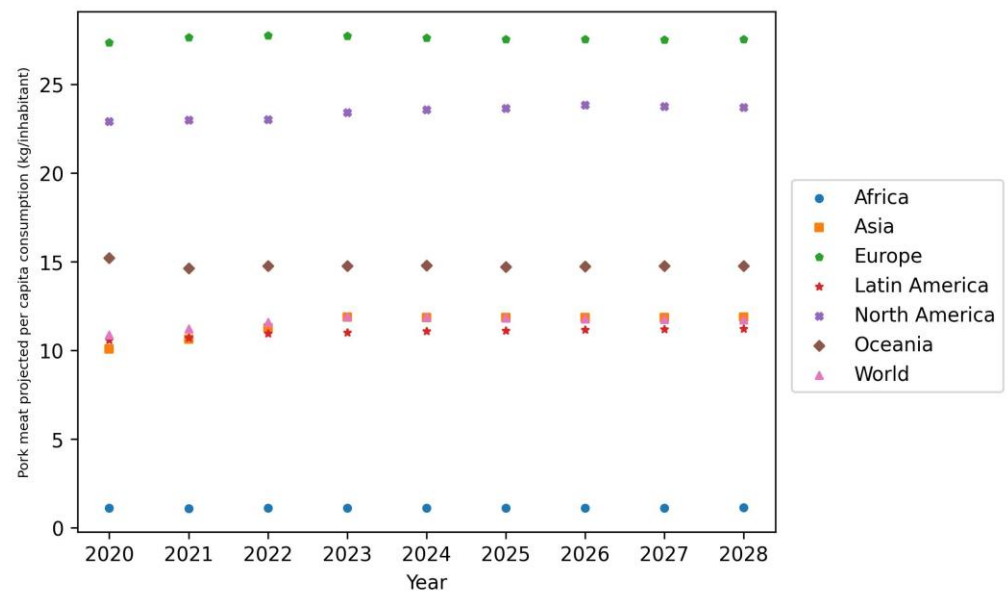


Figure 3. Pork meat projected per capita consumption in the 2020–2029 period. Source: OECD (2023), Meat consumption (indicator). <https://doi.org/10.1787/fa290fd0-en> (accessed on 10 January 2023). Per capita consumption expressed in retail weight. Carcass weight to retail weight conversion factors of 0.7 for beef and veal, 0.78 for pork meat, and 0.88 for both sheep meat and poultry meat.

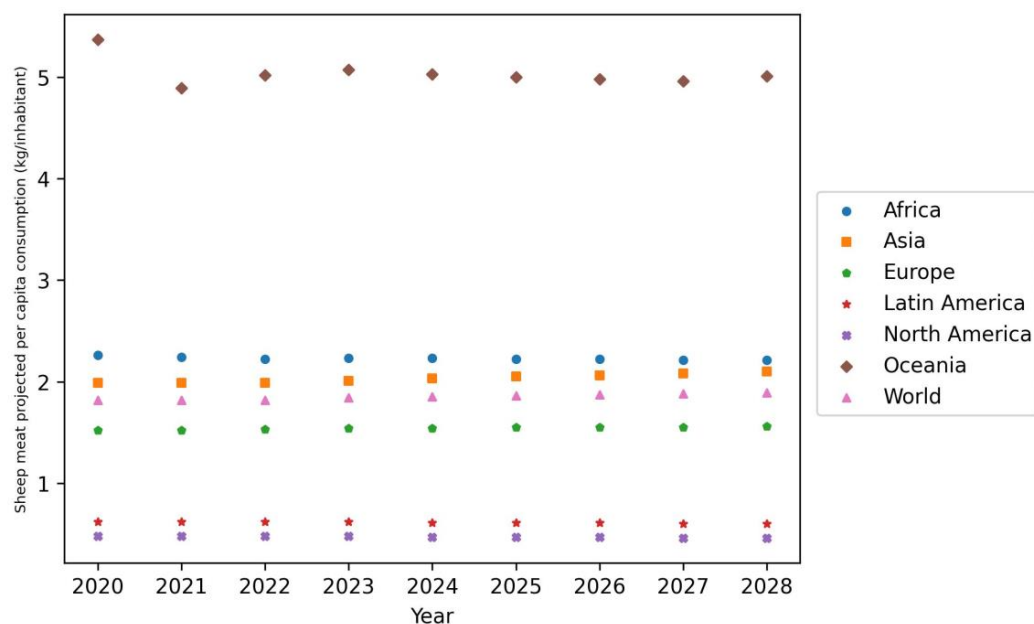


Figure 4. Sheep meat projected per capita consumption in the 2020–2029 period. Source: OECD (2023), Meat consumption (indicator). <https://doi.org/10.1787/fa290fd0-en> (accessed on 10 January 2023). Per capita consumption expressed in retail weight. Carcass weight to retail weight conversion factors of 0.7 for beef and veal, 0.78 for pork meat, and 0.88 for both sheep meat and poultry meat.

Finally, regarding sheep meat, it constitutes a niche market in some countries and is considered a premium component of diets in other countries. For example, in Argentina, although the global image of lamb meat for consumers is good, its consumption is low. This low consumption is associated with a lack of consumption habits, little knowledge of its nutritional characteristics, and the fact that the meat presentation is difficult to cook and preserve [30]. Projected sheep meat per capita consumption in developing and developed countries is similar. In many countries in the Middle East and North Africa, where sheep meat is traditionally consumed, per capita consumption is projected to continue its decline in the long term to the benefit of poultry meat (Figure 4).

Table 1 shows the consumption of beef, poultry, pork, and sheep meat in Argentina, Brazil, Chile, and Uruguay for 2021, in Paraguay for 2020, and in Venezuela for 2018. Beef and poultry dominate meat consumption patterns, representing more than 65% in each country, followed by pork meat [31–36].

Table 1. Meat per capita consumption in some countries of South America.

Country	Beef		Poultry		Pork		Sheep		Other		Total ****	Ref
	kg/inhab/year	%	kg/inhab/year	%	kg/inhab/year	%	kg/inhab/year	%	kg/inhab/year	%		
Argentina *	47.60	40	45.90	39	15.90	13	2.00	2	7.00	6	118.40	[31]
Brazil *	26.15	28	46.90	51	17.72	19	0.58	1	0.76	1	92.11	[32]
Chile *	26.80	33	31.70	39	18.70	23	0.81	1	3.25	4	81.30	[33]
Paraguay **	25.70	43	24.00	40	7.90	13	NA		NA		59.40	[34]
Uruguay *	46.00	50	23.70	26	19.30	21	2.20	2	NA		91.20	[35]
Venezuela ***	8.00	35	7	30	1	5	NA		7	30	23.00	[36]

* Value reported for 2021. ** Values reported for 2020. *** Values reported for 2018 **** Total consumption and share are calculated based on the values reported in the table. NA: not available.

3. Beef Consumption in Argentina: Consumer Attitudes and Concerns

3.1. Eating Habits and Consumer Perception

The consumption of meat in Argentina is related to its traditions and culture. This is manifested in the importance of beef in Argentine meals and gastronomy. A strong connection is observed between gastronomy and the representations of the consumers

with the “asado” (cow meat and entrails cooked on a grill with charcoal or firewood), a meal that is part of the identity of Argentines and comparable to other Argentine cultural manifestations such as tango and soccer [37]. However, as in other countries, modifications in the consumption habits of Argentines are being observed [17]. These changes in eating patterns are due to a set of social, economic, environmental, and demographic factors. Food practices are determined not only by education and access to knowledge, but also by multiple and complex processes in relation to economic aspects, to regulatory policies related to the environment and products, and to sociocultural, environmental, and demographic factors, among others [38].

In the present era, utilitarian consumption, in which the utility and attributes of the product consumed prevail, is changing to an ideological consumption, which refers to the orientation of individuals toward a set of beliefs based on the context of their culture. On the other hand, there is a trend towards responsible consumption, which involves the willingness of consumers to perform consumption behaviors based on their scale of values involving social, environmental, and healthy eating issues [39].

Eating habits are becoming increasingly important in defining people’s identity, and people’s concerns depend fundamentally on the impact of these habits on their daily lives. In this context, environmental concerns can become a reputational risk for the productive sectors [40]. The dispute over the meaning of eating or not eating meat seems to be associated more with a discussion focused on ethics and morals than with a scientific debate. As an example, the results of a study conducted with university students in Spain [41] showed that pro-environmental thinking and behavior translate into greater emotional well-being.

The results of a survey performed by the Argentine beef promotion institute (IPCVA, for its acronym in Spanish) (n = 1100, data collection in 2020) [19], following a standardized methodology [42], have shown that what most interests consumers when buying beef is its freshness, followed in order of importance by an adequate price/quality ratio, fat content, adequacy of the price of the product to their purchasing power, and color. In addition, the results indicate that consumers who consider beef as a meal show greater interest in its freshness, price/quality ratio, fat content, and in whether or not the price adapts to their purchasing power. In contrast, those who consider beef as an ingredient are more interested in the way in which the environment and animal welfare are considered. The results of this survey also showed that when analyzing the type of information that could add value at the time of purchase, the most sought-after attribute is the guarantee of freshness. This is followed, in order of importance, by the fulfillment of expectations in relation to sensory attributes, the certainty that it will not cause a negative impact on health, and the guarantee of the responsibility and ethics of those who produce and market it. In this regard, Burnier et al. [43] showed that if the consumer is involved in the choice and preparation of meat, his/her interest in the production process and a positive attitude towards responsible consumption are greater.

Aspects related to production systems, which are relevant to markets such as the EU and Australia [44], have only recently begun to appear as of interest for Argentine consumers, with the younger segments showing greater interest in them [19]. It is important to assess how each consumer group understands sustainability and what aspects are associated with this concept. Although consumers in general are concerned about sustainability, it is not clear how they deal with its complexity [45] and the relative importance they give to the dimensions that make up this concept.

3.1.1. Consumer Perception of the Sustainability of Livestock and Beef Production

According to the IPCVA survey mentioned above [19], 83% of respondents consider that stopping eating beef is not the main solution to the environmental problem, while 17% consider that it is. Thus, consumers were consulted about the actions they can individually take to contribute to the care and protection of the environment. About 27% of respondents answered that they think that the main measure is the sorting and recycling of waste, 21%

mentioned reducing the use of plastic, and 14% mentioned more frequent use of bicycles, public transport, or walking. Actions with less weight included, in order of importance, devoting more time to improving the environment (8% of respondents), learning about brands and their relationship with the environment (7%), consuming products of local origin (7%), reducing beef consumption (5%), converting to veganism or vegetarianism (5%), reducing the purchase of clothes (2%), and be part of environmental movements (1%). In addition, 7% of respondents said they were not interested in the environment and therefore did not want to carry out any of these actions. In accordance, Hielkema et al. [46] found that many European consumers were unaware of the impact of meat consumption on climate and the environment. However, this trend seems to have started to reverse in the last few years. In addition, Collier et al. [47] found that for many Swedish consumers, choosing foods produced locally or at least from within Sweden is good enough to reduce environmental impact because this reduces emissions associated with the transport of imported meat or meat substitutes.

The results of the IPCVA survey also showed that, in general, the Argentine population considers that the country's livestock production is sustainable [19]. About 24% of the respondents related this sustainability to the profitability of this activity, 18% believed that it is sustainable because it conserves natural resources in the long term, 14% because they understand that this activity allows rural development and people establishment in rural areas of the country, and 6% because it does not harm the environment. Only 14% said that livestock production is not sustainable and 24% that they did not know whether it is sustainable or not. This result is a good starting point to think about providing consumers with education on environmental aspects related to the sustainability of Argentine livestock, which consists of productive schemes with enormous potential to improve and take advantage of the carbon balance.

The social acceptability of meat production is based on the trust granted by consumers. This requires open communication with consumers throughout the value chain [48]. The dissemination of information with simple language and empathic communication is key to achieving a social license, without which it would be impossible to consolidate an adequate positioning of meat products, especially in the younger generations [48].

The analysis of the perception of the sustainability of livestock production according to age groups of Argentine consumers [19] showed that younger generations have a more critical view: 18% of centennials and 15% of respondents between 26 and 49 years of age consider that it is not sustainable, while the percentage drops to 8% for those over 50 years of age. However, in the case of the centennial and millennial segments, 32% and 30% of respondents said that they are unaware of this issue. In addition, some respondents think that there are other factors of greater significance in gaseous pollution, such as industrial production, cars, etc. However, when the analysis was carried out considering different eating behaviors, respondents had a different perception regarding the incidence of these factors. About 50% of flexitarians, 52% of omnivores, 31% of vegans, and 38% of vegetarians considered that industrial gases are the most harmful to the environment, whereas 5% of flexitarians, 3% of omnivores, 29% of vegetarians, and 29% of vegans attributed greater responsibility to livestock gases.

3.1.2. Consumer Perception of the Impact of Beef Consumption on Health

Patterns of consumption of meat and meat products have changed due to consumer concerns related to the impact of the consumption on their health [49]. According to the IPCVA survey [19], 77% of the respondents believe that consuming beef is healthy, whereas 23% believe that consuming beef is not healthy. Moreover, 9 out of 10 respondents think that a person is healthier if they eat a balanced diet with foods of animal and vegetable origin, whereas only 1 in 10 thinks it is healthier to eat only vegetables.

A better understanding of the factors involved in food choices is essential to promote healthy dietary behavior. Cardoso et al. [50] analyzed the perceptions and the emotional factors associated with a healthy diet in inhabitants of Portugal, Brazil, and Argentina

(n = 2501). These authors reported that the sociodemographic variables that most affect perceptions of healthy eating are education, followed by professional area and country. They found a differential behavior of people from Portugal, with respect to those from Argentina and Brazil, associated with the gastronomic tradition given by the Mediterranean diet. Likewise, the authors highlighted the high degree of agreement of the respondents regarding the importance of consuming fruits and vegetables, in achieving a balanced and varied diet, and in not avoiding any type of food.

In Argentina, one of the main limitations to accessing a healthier diet is the economic aspect [51]. At this point, it is necessary to contextualize the nutritional situation of the Argentine population according to the National Survey of Nutrition and Health [52]. According to the data obtained through this survey, the dietary patterns of the Argentine population have worsened in recent decades, due to the high consumption of sodium and sugar compared to the recommended maxima, the very low consumption of fruits and vegetables, and the very high consumption of sugary drinks. This has led to overweight and obesity becoming the most prevalent forms of malnutrition and, thus, becoming a serious public health problem in the country. This is observed in all age and social groups, particularly in groups in situations of greater social vulnerability. In addition, the results of the above-mentioned survey [52] indicate that the population that reports consuming the recommended foods daily (such as fresh fruits and vegetables, meats, milk, yogurt, or cheeses) consumes lower proportions than those recommended by the Dietary Guidelines for the Argentine Population [53]. This confirms the trend that the daily consumption of healthy foods is significantly lower in groups with low educational levels and in those with lower incomes, both in adults and children. That is, the most vulnerable groups not only eat fewer fresh foods such as fruits, vegetables, dairy, and meat, but also consume more foods high in sugar and salt.

3.1.3. Consumer Perception of Animal Welfare

Regarding animal welfare, a meta-analysis study has shown that, in different countries, this issue is growing in importance within the traceable attributes of beef, along with food safety and traceability of the producer [54]. Similar to what happens in other Latin American countries, in Argentina, compliance with certifications that guarantee the production processes does not lead to greater consumer demands or to demand for brands of beef products that could act as guarantors of the quality offered [55]. In this regard, an online survey carried out among participants from Argentina, Chile, Colombia, Ecuador, Peru, and Bolivia (n = 2852, from July 2018 to February 2019) [56] has shown a general level of consumer empathy towards farmers, a general lack of knowledge about the living conditions of farm animals, and a tendency to trust retailers as a source of animal welfare information.

The results of the IPCVA survey mentioned above showed that, beyond the level of concern about the treatment of animals, in Argentina, there is still a high ignorance of the concept of animal welfare and its possible impact on beef quality [19]. About 19% of respondents answered that they do not know what the concept of animal welfare is about and 15% answered that they do not associate the concept with any particularity of the production system. However, those who associate animal welfare with some characteristic of production relate it to avoiding animal mistreatment or suffering, caring for the animals during breeding, providing them with good nutrition, and ensuring the health of the animals.

3.2. Trends Driving the Decrease in Beef Consumption

Although Argentina is a country with a carnivorous culture and tradition, a gradual change is observed in the Argentine food matrix with the emergence of new behaviors such as veganism, vegetarianism, and flexitarianism.

The IPCVA survey [19] showed that most Argentines (66%) follow an omnivorous diet, that 29% are flexitarians who, despite eating all kinds of food, are reducing their level of

meat consumption out of self-interest, that about 3% are vegetarian, and that 2% are vegan. In the case of flexitarians, it is noteworthy that, in parallel to their intention to reduce beef consumption, their diet shows a growing diversification with a greater relative proportion of other meats. This survey was representative of Argentina according to gender quotas (51% of women and 49% of men), age (22% of centennial population, i.e., 16 to 25 years old; 23% of millennial population, i.e., 26 to 35 years old; 28% of generation X, i.e., 36 to 49 years old, and 27% of baby boomers, i.e., over 50 years old), and socioeconomic status [57,58] (5% of belonging to the upper class, level ABC1; 17% to middle class, level C2; 28% to lower-middle class, level C3, and 50% to the lower class, level D1D2) according to official statistics [59].

Similar to that found by the IPCVA survey, in a study carried out in six Latin American countries, Estevez-Moreno et al. [56] showed that less than 5% of the consumers were vegans. Additionally, the authors noted that a preference for plant-based diets is becoming part of the food landscape in the region. In Argentina, Soteras et al. [60] conducted an online survey (n = 2339, data collection 2020) with the aim to analyze the consumption of meat and alternative sources of protein, and found that 84.1% of the respondents classified themselves as omnivores, 8.7% as flexitarians, 6.4% as vegetarians, and 0.8% as vegans. The authors pointed out that a significant number of respondents did not recognize themselves as flexitarians even though they were reducing meat consumption.

Similarly, the Inter-American Institute for Cooperation on Agriculture (IICA) carried out a survey (n = 1000, data collection from December 31, 2021 to January 24, 2022) in seven large urban centers of Argentina, Brazil, and Uruguay (Buenos Aires, Rosario, Córdoba, Sao Paulo, Rio de Janeiro, Salvador, and Montevideo cities) [61], and found that, on average, 26.5% of urban consumers considered themselves as flexitarians; i.e., they based their diet on vegetables and occasionally consumed animal protein. If analyzed by country, the percentage of the population that considered itself flexitarian was 37.3% in Argentina, 35% in Uruguay, and 17% in Brazil. In this study, 1.2% of the respondents in Argentina and 0.8% in the entire study considered themselves as pescatarians (i.e., a person who only eats fish), a type of diet not considered in other studies.

Regarding the term “flexitarians”, at this point it is necessary to take into account that it is defined in various ways in the literature: some define it as those who consume meat once a week, whereas others define it as those who identify themselves as semi-vegetarian or those who are reducing their meat consumption [62]. However, it is a group on which attention should be focused. As stated by De Backer et al. [63], flexitarians could be considered a separate group of consumers due to their differences in moral attitudes and behaviors towards vegetarians and full-time meat eaters.

Emerging Issues as Drivers of Change in Beef Consumption

In the IPCVA survey [19], respondents were asked why they believe that in the next 5 years beef consumption will decrease. The main reasons expressed are the loss of purchasing power (32%), the relative price of beef compared to other types of meats (23%), and the change in eating behaviors (17%). About 15% of respondents believe that beef consumption will not decrease in the next 5 years. When people were asked why they engage in new eating trends, healthy eating was the most mentioned option (52% of the answers), followed by avoiding animal abuse and suffering (22%), preventing diseases (13%), taking care of the environment (10%), and becoming part of the new trends (3%).

Beyond these general trends, results also showed gender and age differences. New eating behaviors are being adopted to a greater extent by women than by men, and by the younger than by the older generations [19,20]. The vegan and vegetarian groups are made up of 73% women and 27% men, whereas the flexitarian population is made up of 63% of women and 37% of men. In the age segment between 16 and 25 years of age, the percentage of the vegetarian population is 7%, while in the segment over 50 years it is only 1%. In Argentina, a trend is observed whereby veganism, vegetarianism, and flexitarianism are growing in relevance in the younger segments of the population. This behavior can be

associated with several reasons such as the search for environmentally sustainable eating patterns [64,65] or with a greater awareness of the problems associated with excessive meat consumption [66,67].

The survey also showed differences according to the type of diet [19]. When analyzing the population that follows an omnivorous diet, 77% of the respondents indicated that the main cause of the lower beef consumption is the price, it being higher than their economic possibilities. Other reasons mentioned were health, avoiding animal abuse, preventing diseases, becoming part of the new trend, and preserving the environment.

In the case of flexitarians, health is mentioned as the main cause (42% of the respondents), whereas economic reasons appear as the second main cause (23%). This is in agreement with that reported by Malek et al. [68], who showed that, for Australian flexitarian consumers, the main reason for reducing beef consumption is health, and, within the segment of flexitarians that most restrict beef in their diet, the concern about animal welfare is also important.

In the case of the vegan and vegetarian segments, the main reason why they have abandoned beef consumption is related to animal abuse, followed in second place by the search for a healthier diet [19].

Motivations related to health highlight the belief in a link between beef consumption and disease development, and the proposal that no longer eating beef would lead to a healthier life and better well-being.

In Argentina, a survey performed in the metropolitan region of Buenos Aires [69] showed that, concomitantly with the decrease in the consumption of beef, there has been an increase in the consumption of pork and poultry meat. Nevertheless, this increase is constrained by certain perceptions or beliefs of consumers, such as the fact that hormones are still used in the chicken production system and that pork has higher cholesterol content than other meats. Instead, these products are appreciated for their practicality of use, taste, and price [69]. Since these results were obtained only for the metropolitan region of Buenos Aires, it would be necessary to extend this study to populations with other sociodemographic characteristics and consider different eating behaviors.

Regarding consumer attitudes towards farm animal welfare (FAW), an online survey carried out in Argentina, Chile, Colombia, Ecuador, Peru, and Bolivia ($n = 2852$, with vegans excluded from the analysis) [56] showed four different groups of consumers: consumers ethically committed to FAW (in this group 31.6% of respondents resided in Argentina), consumers committed to farmers and interested in labels (18.1% of whom resided in Argentina), consumers interested in FAW and farmers and their efforts towards FAW (22.1% of whom resided in Argentina), and apathetic consumers (27.4% of whom resided in Argentina). This survey showed that the response of consumers was associated with different attitudes that included ethical concerns, trust in retailers, labeling as sources of information, and empathy towards farmers. Only 27.4% of respondents from Argentina did not express concerns about FAW.

One aspect to deepen the perception of Argentine consumers is the relationship between FAW and the features of each production system. In this regard, Irish consumers viewed cows and cattle as part of an extensive pasture-based system with high public visibility, leading to positive welfare perceptions. In contrast, chicken and pig farms were seen as intensive, with little public visibility, generating fewer positive perceptions [70].

Ethical–moral motivations are relevant in those who complain about animal abuse and exploitation, and those who think that animal and human rights are equal. In addition, some animal organizations try to redefine the socio–environmental imaginaries. This also leads to the emergence of new policies and rhetoric of the living, in which the animal form loses formal strength and the notion of species is challenged [71].

According to the IPCVA survey mentioned above, environmental concerns seem not to be the main reason for the lower beef consumption in Argentina [19]. Only 4% in the case of vegans and vegetarians, and 6% in the case of flexitarians mentioned that their reduction or non-consumption of beef was related to environmental reasons. In this regard,

the results of a survey carried out in eleven EU countries by the European Organization of Consumers (BEUC) [72] showed that consumers tend to underestimate the environmental impact of their own eating habits; although, there is some awareness of the impact of eating habits in general.

Several studies have shown the interest of EU consumers in sustainability and greenhouse gases. However, the use of labels with information related to these topics is not yet widespread [73]. In Argentina, the use of labels in the commercialization of beef is not frequent. In addition, given the current macroeconomic context, there are limitations for a high percentage of the population to pay differential prices.

According to Millan [74], consumers build the image of a product from the information they have, and, along with the evolution of information technologies and the growth in social networks, they make more decisions in the digital environment. Consequently, people have greater access to information with various positive and negative opinions about the products they want to buy [74]. Changing the negative perception of consumers requires an approach to their interests and to the definition of specific strategies to communicate the qualities of the product. Social networks (such as Instagram, Facebook, and Tik Tok) are becoming key tools to reach each age group in a segmented manner and with specific messages. In the IPCVA survey, Argentine consumers were asked about the influence of social networks on their beef purchase habits [19]. Respondents mentioned that news referring to the high price of the product, the bad reputation of beef associated with animal maltreatment, environmental damage, and detriment to health have a high negative incidence. This incidence increased in the case of women and younger age segments. In addition, we must consider that some Argentine consumers believe that there are commercial interests in the treatment of food in the media, which outweigh the concern for public health [61]. Similar results were found by Cordts et al. [75] in European countries, where negative information about animal health and welfare seems to affect beef demand. Accordingly, Hielkema et al. [46] reported that one of the reasons for the decision to reduce meat consumption is participation in a social network that contains others who have reduced or stopped their consumption.

3.3. Future Trends

According to the report, “Food for thought: the protein transformation”, it is estimated that, by 2035, every tenth serving of meat, eggs, dairy, and seafood consumed worldwide will be produced from alternative protein sources [76].

Meat analogs are meat products in which a part of the meat is replaced by another ingredient, for example, vegetables [77]. The consumption of this type of product is considered an emerging strategy to reduce meat consumption and improve the nutritional quality of certain meat products. However, the sensory properties of meat analogs, especially flavor and texture, are relevant to achieve consumer acceptance. In addition, they must be able to be used in ways similar to meat products [78]. As stated by Chodkowska et al. cultivated, cultured, or in vitro meat is a product from isolated muscle cells, which are cultured as cell lines and then placed in a bioreactor. The objective is to produce a cheaper meat substitute with texture and organoleptic properties similar to real meat [79].

In the IPCVA survey, Argentine consumers were asked about which foods they are most interested in incorporating into their daily meals in the future [19]. In the first place, respondents mentioned foods that are good for health (66% of the answers), and then mentioned foods that allow balancing nutrition (59%), foods that give energy (43%), ecological or organic products (27%), products that help to lose weight (24%), and foods that allow replacing meats with vegetables (20%). Respondents mentioned certain advantages related to the potential consumption of artificial meat: the lower animal suffering (34%), the lower use of natural resources for production (12%), and the lower price (9%). Regarding the disadvantages, 31% of the respondents considered this product as artificial or unnatural, 27% mentioned that its effect on health is not known, 14% said that it comes from a laboratory, and 11% said that its composition is not known. Only 3% of people considered

that artificial meat has no disadvantages. Moreover, 15% of the respondents would buy artificial meat while 85% would not. When the analysis was disaggregated according to age, 23% of centennials said that they would buy the product if it begins to be marketed in the country, whereas only 8% of baby boomers expressed that they would do so.

In disagreement with the previously mentioned results, in another survey on meat consumption by Argentine consumers [61], 63.2% of them expressed a total or partial intention of consuming artificial meat. The results of this survey also showed a low willingness of consumers to pay more for artificial meat compared to conventional meat. Regarding plant-based products, 56.9% of the respondents expressed total or partial intention of eating plant-based products or vegetable products instead of meat, the intention being lower for people over 40 years of age.

The differences between these two surveys [19,61] regarding the consumption of artificial meat may be due to the characteristics of the sample: the IPCVA survey [19] included a representative sample of the sociodemographic characteristics of Argentina in general, while the other survey [61] included urban consumers from cities with a high number of inhabitants.

Given the growth of the category of meat analogs, extensive debates are being held regarding the use of the term meat and its influence on consumer attitudes and their purchase intention. Faber et al. [80] reported that consumers in Belgium and the Netherlands found the term plant-based more attractive than a vegetarian diet or vegan diet. Bryant et al. [81] observed no differences between consumers from the United States in relation to the use of the terms cultured- and lab-grown meat, and a more positive connotation for the term clean meat. In general, according to the IPCVA survey, the majority of Argentine consumers [19] believe that laboratory meat should not be called meat, as it can lead to confusion when purchased. Beyond this general consideration, 27% of centennials and 17% of baby boomers mentioned that this would not generate confusion [19].

4. Brief Overview of Eating Habits and Concerns of Consumers in Some South American Countries

In South America, agriculture comprises a significant proportion of the economy and makes up a big part of the GDP of the countries in the region, with the performance of the poultry, bovine, and pig production sectors being especially important. Small family farms add a social component to this scenario, playing a significant role in the production of food and in the promotion of territorial development and regional economies [82,83]

A Latin American study of nutrition and health (ELANS, for its acronym in Spanish) analyzed food groups (fruits, vegetables, legumes/beans, red meat, processed meats, etc.) consumption in urban consumers (n = 9218, data collected in 2014 and 2015) from eight countries [84]. The results indicated that the red meat group (including pork meat, beef, and sheep) was consumed in most of the Latin American countries, being the second most consumed food group after vegetables. Therefore, red meat appeared to be a fairly uniform source of energy, protein, and micronutrients.

Several initiatives have been developed to promote animal welfare and sustainable production processes in Latin America, with emphasis on education actions along the value chain, the development of specific regulations and promotion strategies, and the implementation of good practices and welfare standards [35,85–90]. In meat-production countries with different production strategies, such as Uruguay and Argentina, it is important to relate animal welfare to the specificities of each production system, to generate contextualized information for each system [86]. Moreover, the actions should be complemented by providing consumers with validated regional information to meet their demands and help them to make informed choices [91].

4.1. Brazil

Brazil is one of the largest consumers of beef in the world. Hötzel et al. [92] presented a review of different studies that analyzed meat consumption and highlighted the following

points: a high percentage of consumers expressed their interest in reducing meat consumption; women and young people are more willing to try alternative proteins such as plant and insect proteins; and there is low concern among consumers about the environmental impact of meat production.

Regarding the impact of the price of beef, in a previous study, Magalhaes et al. [93] found that for Brazilian consumers purchasing power may influence the type of meat, the type of beef cut, and/or quantity of the product they select.

Marondin et al. found that 55% of the respondents described themselves as carnivores, 33.9% as flexitarians, and 11.1% as vegans/vegetarians (n = 199, data collection in 2021) [91]. Moreover, it was found that the respondents would accept meat analogs, mainly in formats that are easy to prepare, such as hamburgers. Consistent with these results, a report from the ADM company indicated that 52% of the participants identified themselves as flexitarian and that 42% showed interest in trying alternative protein sources or had already tried them. The results also indicated that consumers showed no interest in analogous products imitating meat but rather in those having their own characteristics of flavor and texture [94].

In Brazil, the tradition of eating beef is related to the barbecue (“asado”) [93]. Fernandes et al. [95] (n = 862, data collection in 2020) observed that 58% of the respondents had never heard about cultured meat. Furthermore, people who consumed more barbecue, and lived in rural areas and took part in traditional activities, were less likely to accept cultured meat. The majority of respondents (56.4%) who ate barbecue most often disagreed that cultured meat is more ethical than conventional meat.

Regarding sustainability issues, Cardoso et al. [50] (n = 11,960, data collection in 2017) showed that 46.8% of Brazilian respondents were identified as consumers that base their food choices on their environmental concerns and aspects related to quality associated with sustainability, while 22.5% showed no type of ecological or environmental concerns when choosing their food. Accordingly, Soares Valente et al. [96] (n = 726, data collection in 2018) found that the main concerns related to meat consumption are animal welfare, and environmental and health aspects.

4.2. Chile

In Chile, the beef produced in the country competes either with other meats or with beef imported from countries of the region [97]. A survey carried out in the Bío-Bío and La Araucanía Regions [98] (n = 800, data collection in 2011) showed that consumers prefer low-fat beef, of national origin, and packaged. Moreover, three groups of consumers were defined mainly related to the importance assigned to meat consumption for personal well-being.

Regarding eating habits, results from a web survey [99] (n = 500, data collection in 2021) showed that 84% of Chileans regularly consume foods belonging to an omnivorous diet, 9% declare themselves as flexitarian, 3% as vegetarian, 1% as vegan, and 3% as pescatarian. About 36% of respondents mentioned that they have tried to reduce the consumption of foods of animal origin, with a significantly higher percentage of women than men, mainly due to health concerns and animal welfare. Moreover, 6 out of 10 respondents considered that they would consume plant-based food, the main motives being health, animal welfare, ethical aspects, environmental aspects, and sustainability.

Panea et al. [100] analyzed Chilean consumer knowledge and perception of Osorno steer meat (n = 615, neither vegetarians nor vegans were included). The results showed that price is a key factor for most consumers. Moreover, 32% of those respondents consumed either Chilean or imported beef without distinction, mainly for two reasons: imported meat is cheaper than national products, or easier to find at points of sale. The results also showed that both men and women like to buy and cook food and that women choose food for nutritional reasons more often than men. Finally, results showed that young people are less interested in products with a Chilean identity, do not have fixed consumption habits, and give little importance to mealtime.

Regarding farm animal welfare, Estevez-Moreno et al. [56] (n = 582 Chilean consumers) found that 27.5% of Chilean respondents are most ethically concerned about FAW, are empathetic towards farmers, and have a more positive perspective on the evolution of the living conditions of farm animals, whereas 19.6% are least ethically concerned about FAW and show less empathy towards farmers.

4.3. Paraguay

In Paraguay, livestock plays an important economic role and has historically been oriented to the production of beef [101]. Ocampos Olmedo et al. [102] (n = 345, data collection 2011) showed that the most important characteristics for consumers to select beef are price, color, and tenderness. In addition, 12% of respondents would be willing to pay extra (5%), under reliable certifications, to ensure the precedence, quality, and safety of the beef. According to this survey, the most preferred cuts are those traditionally used for barbecue (“asado”).

Dietary profiles in Paraguay are changing as in other countries. Centurión-Bernal et al. [103] (n = 132, data collection 2017) found that 50.76% of the consumers opted for a vegetarian diet due to animalistic principles, 21.21% for health benefits, 9.09% for religious beliefs, and 9.09% for ecological reasons.

4.4. Uruguay

Finally, Uruguay is worldwide known for being one of the top 10 beef-exporting countries. Meat has a central role in the Uruguayan food culture and is recognized as a valuable protein source [104].

Realini et al. [105] (n = 601, data collection in 2022) found that 85.1% of the participants reported not following any special diet, 4.3% self-identified as flexitarian, 5.2% as vegetarian, 1.0% as vegan, and 2.0% as pescatarian. Many of the participants perceived meat as a rich source of key nutrients, necessary, essential, and part of a healthy diet. The main reasons that determined the change in the consumption of meat were price, health, and changes in the diet, mainly related to the intention to increase the consumption of vegetables or adopt a healthier diet. Participants showed little awareness of the potential environmental impact of meat production. Concerns about animal welfare emerged as relevant, primarily in the youngest and most educated female participants. Moreover, 65% of participants expressed their willingness to pay more for meat that includes certifications associated with animal and environmental welfare. Furthermore, the majority of respondents (75%) refused to consume meat analogs, and 54% pointed out that they were unaware of this type of product [106].

A survey conducted by the National Meat Institute of Uruguay [107] (n = 1333, data collection in 2019) showed that beef is related to a home experience, with domestic habits and routines. Moreover, it showed that respondents who perceived a greater negative impact of beef consumption on health, mainly urban residents and people with a high level of education, used low-fat content as the main decision criterion during purchase.

5. Concluding Remarks

Consumer attitudes towards different food production systems depend on different aspects that include the rational evaluation of associated risks, economic and nutritional aspects, and aspects that reflect their ethical and moral considerations [108,109]. Regarding beef consumption, general trends can be defined; although, specificities are observed in different countries of South America. Most consumers recognize themselves as omnivores, a smaller group as flexitarians, and a minority define themselves as vegetarians or vegans. The pescatarian classification was not assessed in most studies.

In most of the countries studied, the price of meat plays an important role in consumer choices and was an aspect deepened due to the crisis associated with the COVID-19 Pandemic. If this scenario continues, the consumption of beef could continue to fall or there might be a greater share of cheaper meat.

Consumers have a positive perception of the sensory attributes of beef and recognize its nutritional value. Beef consumption has strong cultural roots and is linked to culinary preparations, among which the “asado” stands out for its contribution to the identity of the region.

Health concerns and ethical questions related to animal welfare and the impact on the environment are beginning to gain importance. These aspects may become the main drivers of the lower consumption of beef in the future.

Consumer segmentation is widely described in the literature and has been used in various studies related to food consumption [110–113]. In general, we can describe millennials as being more numerous, with higher purchasing power, better educated, and ethnically more diverse than the older consumer segment. Since millennials have an active presence in the social media universe, they are more likely to be open to change and more expressive than previous generations [114]. Gen Z or centennials are an increasingly important consumer segment in the food market and have a significant impact on food purchases [112]. Baby boomers are a growing part of society, looking for a healthier and more active life, so their needs are different from previous generations [113]. These characteristics must be addressed by integrating them into the socioeconomic context of each country or region, and by contextualizing the concerns and attitudes of these groups of consumers.

In Argentina, as in other countries of South America, changes are taking place in the eating behaviors of the population. Beyond the economic limitations, part of the population surveyed in different studies believes that the decrease in beef consumption in the next five years will be associated with changes in eating behaviors. In this context, despite being a country with a carnivorous culture and where most of the population follows an omnivorous diet, around 29% of the respondents define themselves as flexitarians, and 5% as vegetarians and vegans. However, inconsistencies are observed when consumers are asked to define themselves according to the type of diet.

The evolution of beef consumption is limited by purchasing power, one of the determining factors in the purchasing decision, especially for low- and medium-income households. This suggests that, at least for these groups, beef consumption continues to have an aspirational character.

In general, the results of the surveys show that the Argentine consumer is concerned about the effect of beef consumption on health, the impact of livestock production on the environment, and aspects related to animal welfare. For omnivores, the consumption of beef is associated mainly with positive perceptions of organoleptic aspects and nutritional characteristics. In the case of flexitarians, the search for a healthier diet is mentioned as the main reason that leads them to adopt this behavior. Flexitarianism can be considered a transitional stage towards vegetarianism or veganism, which can be influenced by both the information and the education received.

Animal welfare, care for the environment, and the perception that livestock production is a polluting activity have begun to form part of the concerns of young Argentine consumers. This is reflected in a higher prevalence in this age group of the adoption or intention to adopt veganism or vegetarianism as eating behaviors that leave aside the consumption of meat products.

If the conditions that define the current scenarios in Argentina continue, the motivations to consume less meat could be strengthened. These trends are observed in a country recognized as a supplier of food to the world, but in which part of its population suffers from food insecurity.

Consumer demands and dietary patterns create several challenges for the animal protein industry that must be met through the action of all actors in the value chain. The aim of reducing the environmental impact implies the application of various production and commercialization strategies such as achieving greater production efficiency, using sustainable energy and new packaging materials, and developing circular economy models, among others [115]. The concept of sustainability is linked to the ethical values of the

products that include social demands of a different order (human well-being, commercial practices, and social responsibility, among others) [116]. The transition towards a healthier and more sustainable diet must contemplate a better integration between actors in the value chain in order to achieve more efficient food governance [117].

Limitations

The limitations of the present review are mainly twofold. The first is that, up to date, no homogeneous information has been found for all countries. Despite this limitation, the analysis helps to understand beef consumer trends. Secondly, and beyond the limitations of the studies described, the results obtained before the COVID-19 Pandemic must be validated. However, they constitute a starting point to evaluate its effect.

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