

**Review Article**

Global Trends of Meat Production and Consumption

Bainesagn Worku Wolelie

Ethiopian Institute of Agricultural Research, Debre Markos Agricultural Research center,
Debre Markos, Ethiopia

ABSTRACT

Global meat production and consumption have important implications on health, nutrition, and the environment. The objective of this paper is to review the total meat production and consumption, the global trend of meat production and consumption, and also review factors affecting meat production and meat consumption. From this review, the World is producing a total of 337 million tones at an increasing rate. The world is majorly producing its total meat from Poultry, Pig, Bovine, and ovine. Currently, about 122.5, 121.1, 71.2, and 14.9 million tons of total meat is produced from poultry, pig, Bovine, and ovine respectively. The majority of global total meat is dependent on poultry and pig with an increasing trend. Increased economies, Urbanization, population growth social dynamics, and technological advancement are strong factors that affect meat production and consumption. Therefore, meat production and consumption are continuing to increase around the globe since meat is an important and rich source of protein.

Keywords: Meat production, Meat consumption, Consumption trend, Production trend

INTRODUCTION

The world population is expected to increase from 7.1 billion to 9.7 billion requiring extra Meat demand which is a bioactive source of protein. Global Trends in meat production and consumption have been investigated by different scholars (Margaret, 1999, Enahoro *et al.*, 2021, IATP and Grain, 2018, Minna, 2013), owing to their important implications for human health, food security, and the environment (Whitton *et al.*, 2021; IATP and Grain, 2018; De Bakker & Dagevos 2012). Currently, the health inequality conflict between malnutrition and obesity is highly reflected by

Corresponding Author: Bainesagn Worku Wolelie < baiworku@gmail.com >

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different scholars based on the situations they are existed (Henchion *et al.*, 2021). Meat and meat products contain important levels of protein, vitamins, minerals, and micronutrients which are essential for growth and development. To its optimum healthcare (avoid malnutrition and undernutrition) a person should get 20 grams of protein per day or 7.3kg per year. To fulfill the annual requirement of protein a person needs to consume 33 kg of lean meat (FAO, 2022). Gross domestic product and its redistribution among the population, the standard of living, the market structure, the intensity of international trade and individual consumer behavior are gearing factors that affect the trend of this valuable meat production and consumption (FAO, IFAD, UNICEF, WFP and WHO, 2020, Jabbar *et al.*, 2010, Nozaki, 2016). Therefore, this paper aims to review the intensity of major meat production sources, distribution dynamism, trends, and factors affecting meat production and consumption.

The Major Meat Sources, Production, and Its Distribution

The world's total meat production was continuously growing from time to time until 2019. However, this global meat production is widely variable, from the smallest 1.1 % change to the highest 78% at different times. On the other side after Covid- 19 outbreak, the meat production trend becomes slow down.

Table 1: Global Meat production at different time

Time frame	Meat production increment	% Increment	Reference
1990 -2007	180 to almost 286 million tones	59%	
2012-2014	304.2 to 311.8 million tones	1.1%	(FAO,2014)
2018-2020	342.4 to 333 million tones	-1.7%	(FAO,2020)
1665- 2017	84 to 330 million tones	78%	(FAO,2018)
2008-2018	339 to337 million tones	20%	(FAO, 2019)

Mainly the overall World's total meat is produced from poultry, Pig, Beef, Sheep and Goat, Goose and guinea fowl, fish, camel, duck, horse, and wild game. Though the source of meat production is diverse livestock species around the globe, the higher share of the total meat produced was lying on poultry, pig, beef and sheep, and goats respectively.

Table 2: World recent Major meat types production in million tones

Meat items	Year		
	2016	2017	2018
Bovine meat	69.7	70.9	72.1
poultry meat	119.0	119.9	122.5
Pig Meat	117.8	118.8	121.1
Ovine Meat	14.7	14.8	14.9
World total Meat	326.8	330.0	336.2

Source (FAO, 2018)

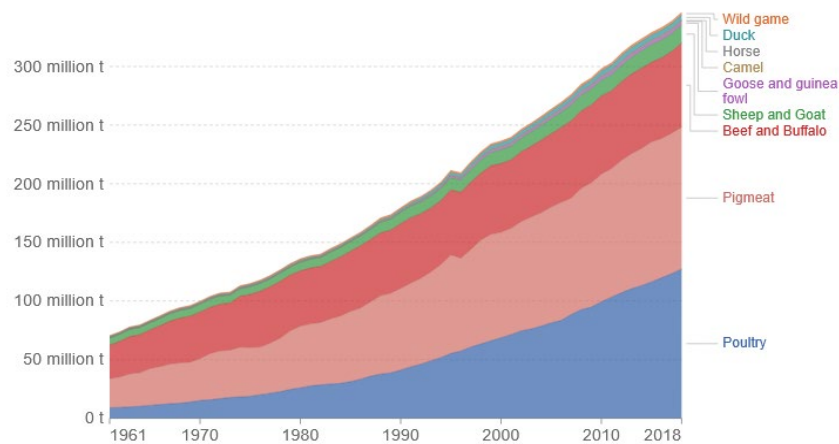


Fig. 1: Global production of meat 2016-2020 from different species source (Shahbandeh, 2022)

Regionally, Asia is the largest meat producer, accounting for around 40-45 percent of total meat production. This regional distribution has changed significantly in recent decades. In 1961, Europe and North America were the dominant meat producers, accounting for 42 and 25 percent, respectively. In 1961, Asia produced only 12 percent. By 2013, Europe and North America's share had fallen to 19 and 15 percent, respectively. Similarly, in recent years the major meat production distribution in the world was led by Asia and the change in incensement is very high while, the trend of meat production is stagnant or very small in the developed world.

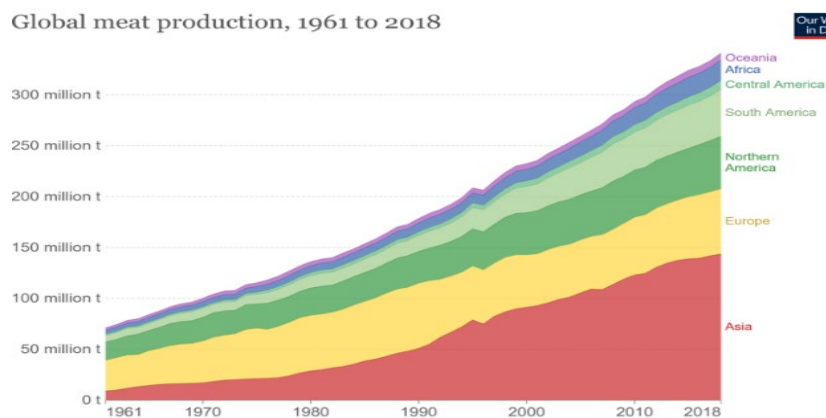


Fig. 2: Meat production from different regions at different times (Shahbandeh, 2022)

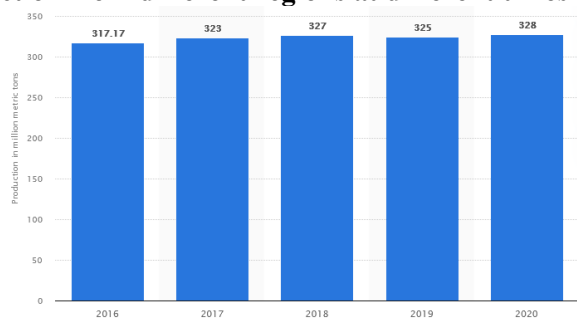


Fig.3. Production of meat worldwide from 2016 to 2020 (in million metric tons)

Source: UN FOOD and agriculture organization (FAO, 2019)

In general Meat, production has increased continuously during the past four decades, and consequently, its production per capita has increased from 27 kg/person/year in 1970 to 42.4 kg/person/year (Taheripour *et al.*, 2013). This means that the production of meat has increased at a rate greater than population growth.

The Trend Dynamism of Meat Production and Consumption

From the perspective of the rich, industrialized countries, the importance of the agriculture and food sector has constantly decreased over the last decades. The share of agriculture and food in overall GDP is falling and it is below 5 percent now in most industrialized countries. In most poor countries domestic agricultural and food production is not only important for food security and health, it is at the same time the major type of employment and source of household income.

Changes in livestock production driven by both demand and supply-side factors have been significant worldwide. The key drivers of change in the livestock sector are economic growth and income, demographic and land-use changes, dietary adjustments, and technological change (Delgado *et al.*, 2008 and Steinfeld *et al.*, 2006). Increased individual consumption of livestock products is most closely linked with rising income, although changes in lifestyle, urbanization, and shifts in the demographic structure, have also contributed to rising consumption. The meat production change in developing countries from 1970 to 2008 is exponentially increasing trend while meat production trend in developed countries mildly increasing.

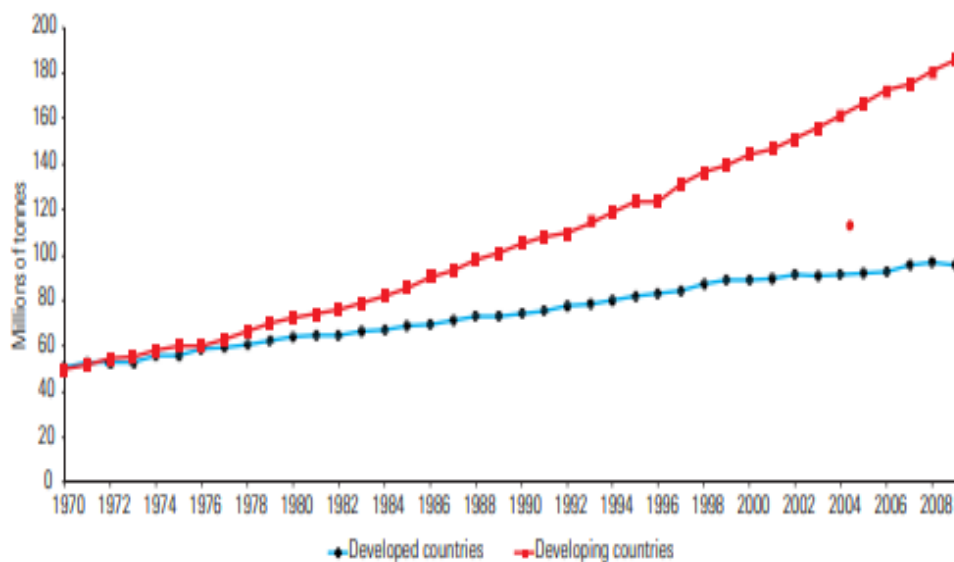


Fig. 4: Meat production trend between developed and developing countries from 1970 to 2008
(FAO, 2010)

The change in diet and food consumption patterns towards livestock products has affected the global food economy. Global meat production has increased rapidly over the past 50 years – as we see, total production has more than quadrupled since 1961 (Ritchie & Roser, 2017).

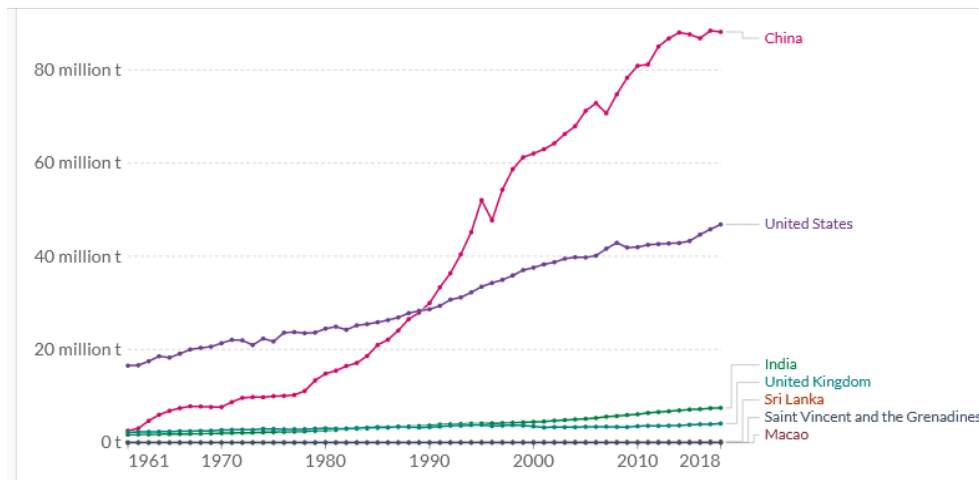


Fig. 5: The trend of meat production in different regions (FAO, 2010)

Note: Figures are given in terms of dressed carcass weight, excluding offal and slaughter fats

The average total meat consumption per capita per year of the region was changed across regions, countries, and time series of the world. The variability and the trend change might be based on the economic social and life chances of different countries in different time series

Table 3: Average total meat consumption of 2011 in countries and average meat consumption of regions from 1982 to 1998 G.C

Regions	Consumption of Meat per capita in Kg (1982-1998)	Countries	Meat consumption per capita in kg
Sub-Saharan Africa	12kg	Most European countries	70-90 kg
Asia	18kg	Taiwan	80 kg
Latin America	45kg	Japan	50 kg
Developed nations	76kg	China	70-90 kg
		Korea	70-90 kg
		Vietnam	57 kg
		Myanmar	39 kg
		USA	120 kg
		Australia	100 kg
		Brazil	90 kg
Reference	Margaret, 1999	Reference	(Yukiko, 2016)

The rapid growth in the meat sector has been underpinned by rising demand for poultry meat, which has consistently increased around three times the population growth rate over each of the past five decades. On the other hand, growth in per capita consumption has been stagnant or non-existent, especially in ruminant meat (cattle, sheep, and goats) and pork (when China is excluded). Poultry consumption in developing countries consistently outpaced production during the last ten years. The

consumption of pork in developing countries, including China, one of the world's largest pork producers and consumers, has been decreasing. Similarly, red meat (cattle and goat) production and consumption growth has shown only a slight change globally during the last ten years (Enahoro *et al.*, 2021)

Table 4: Average consumption (in kilograms/capita/year) of different meat by region

Year	Meat item	Developing countries*	Developed World countries*	Sub-Saharan Africa	South Asia	East Asia	Latin America countries & Caribbean	World
1980	Bovine meat	10.74	21.62	6.90	3.25	5.75	19.62	10.57
	Pig meat	6.77	27.99	1.30	0.18	5.49	6.76	11.87
	Poultry meat	6.85	14.74	1.76	0.59	4.57	7.97	5.76
1990	Bovine meat	9.95	20.07	6.39	3.62	5.88	16.70	10.32
	Pig meat	7.27	31.16	1.49	0.22	8.08	6.31	13.12
	Poultry meat	9.56	18.27	2.39	0.86	6.48	9.80	7.63
2000	Bovine meat	9.80	19.55	5.77	3.55	6.53	17.06	9.53
	Pig meat	8.47	35.34	1.71	0.23	9.08	7.99	14.85
	Poultry meat	12.64	25.15	3.12	1.49	10.42	18.53	10.93
2007	Bovine meat	9.43	20.33	5.96	3.77	5.21	14.84	9.59
	Pig meat	10.02	34.09	1.85	0.22	11.95	9.42	15.05
	Poultry meat	15.27	28.73	4.14	2.14	12.85	22.57	12.62

Source: (Narrod *et al.* 2011)

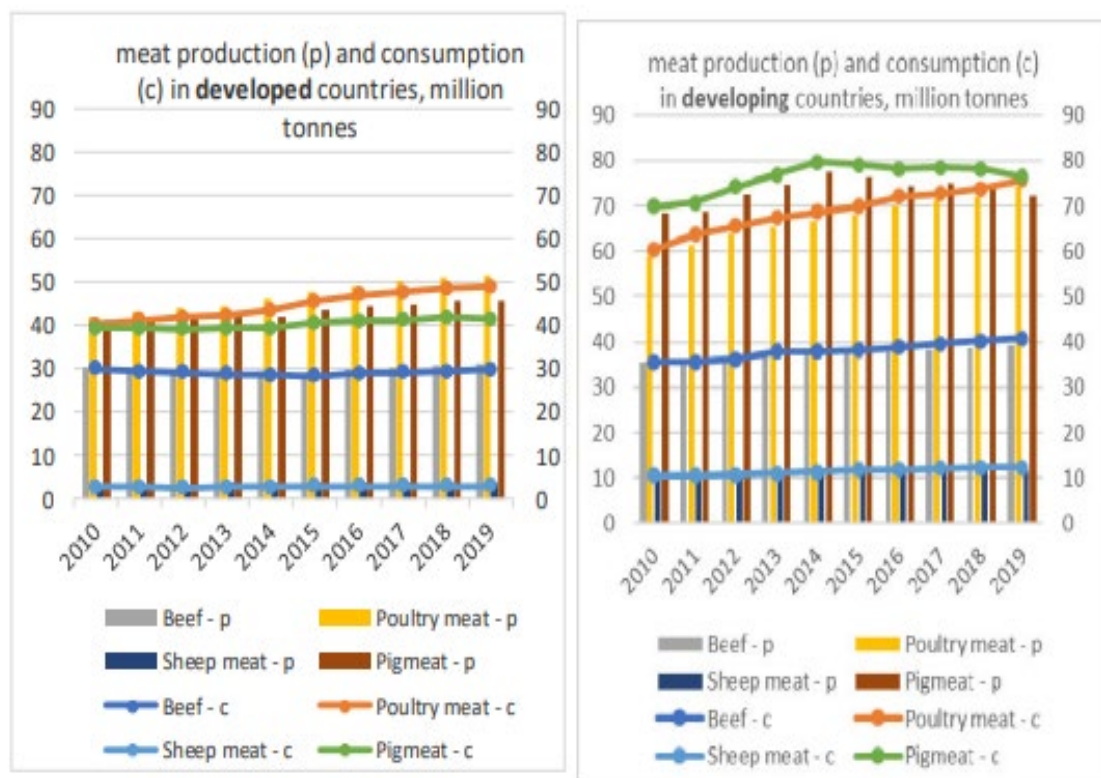


Fig. 6: Average meat-type production and consumption in developing and developed countries in million tonnes (Enahoro *et al.*, 2021)

Factors Affecting the Trend of Meat Production and Consumption

Many factors are driving the increased demand for meat proteins. This might be the emergence of increased economies in many developing countries. In countries like China, urbanization has provided new infrastructure capable of supporting livestock production through advanced technologies.

The key drivers of change in the livestock sector are economic growth and income, demographic and land-use changes, dietary adjustments, and technological change. Increased individual consumption of livestock products is most closely linked with rising income, although changes in lifestyle, urbanization, and shifts in the demographic structure, have also contributed to rising consumption.

At the same time, many new technologies have been developed that have transformed the way livestock products are produced and processed and have helped deliver a wider variety of higher quality products to consumers. The trends of global Meat production and consumption are affected by the efficiency of meat production on the environmental burden (Vergunst & Savulescu, 2017). Between 1961 and 2015 the world population rose from 3 to almost 7.1 billion (by 130%), while the global average meat consumption per capita increased by 75% so that global meat consumption and production almost quadrupled (FAO, 2015, FAO, 2016,). Similarly, social drivers have a crucial role in meat consumption and production. As urbanization increases the livelihood of the society and lifestyle are improved. Therefore, urbanization positively impacts meat consumption. On the other side, religion affects negatively meat consumption and production (Milford *et al.* 2019). Similarly, Global enhancement pharmaceuticals, feed additives, dietary optimization, housing, genetics, enhanced selection criteria, reproductive technologies, semen sexing, animal health, and husbandry improvements are all forms of performance-enhancing technologies (Dilger *et al.* 2016).

CONCLUSION

Meat production and consumption are interrelated phenomena around the globe. Both Meat production and consumption are positively correlated events in the world. The trend of meat production and consumption is going in increasing trend. Therefore, this review shows that meat production and consumption are continuing to increase around the globe since meat plays a vital role as a rich protein source for the world.

Conflict of Interests

The author declares that there is no conflict of interest.

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