

INFO SHEET 1 - EGG PRODUCTION - GLOBAL

PRODUCTION & TRADE

In 2020, there were 7.9 billion laying hens globally, producing 1.6 trillion shell eggs (86.7 million tonnes) (Table 1), and the industry was valued at US\$ 113 billion (FAOSTAT)¹. Chinaⁱ, the largest producer, accounted for more than a third of global shell egg production and more than 40% of the world's hens in 2020, followed by the USA and India (Fig. 1). The top egg producing companies globally are located across the Americas and Asia (Table 2).

Table 1. Hen egg production globally and in various world regions in 2020. Includes eggs for consumption and eggs for hatching¹.

Region	Hen egg production (million tonnes)	Share of global hen egg production (%)	Hen eggs produced (billion eggs)	Layers (millions)	Share of global layers (%)
World	86.7	100.0%	1642.9	7,899	100.0%
Asia	54.1	62.4%	1059.3	5,340	67.6%
Europe	11.1	12.8%	192.4	817	10.3%
Latin America*	10.4	12.0%	187.9	741	9.4%
USA and Canada	7.2	8.3%	121.6	424	5.4%
European Union (27)	6.3	7.3%	108.6	456	5.8%
Africa	3.5	4.1%	75.6	553	7.0%
Oceania	0.3	0.4%	6.0	23	0.3%

* includes South America, Central America (including Mexico) and the Caribbean.

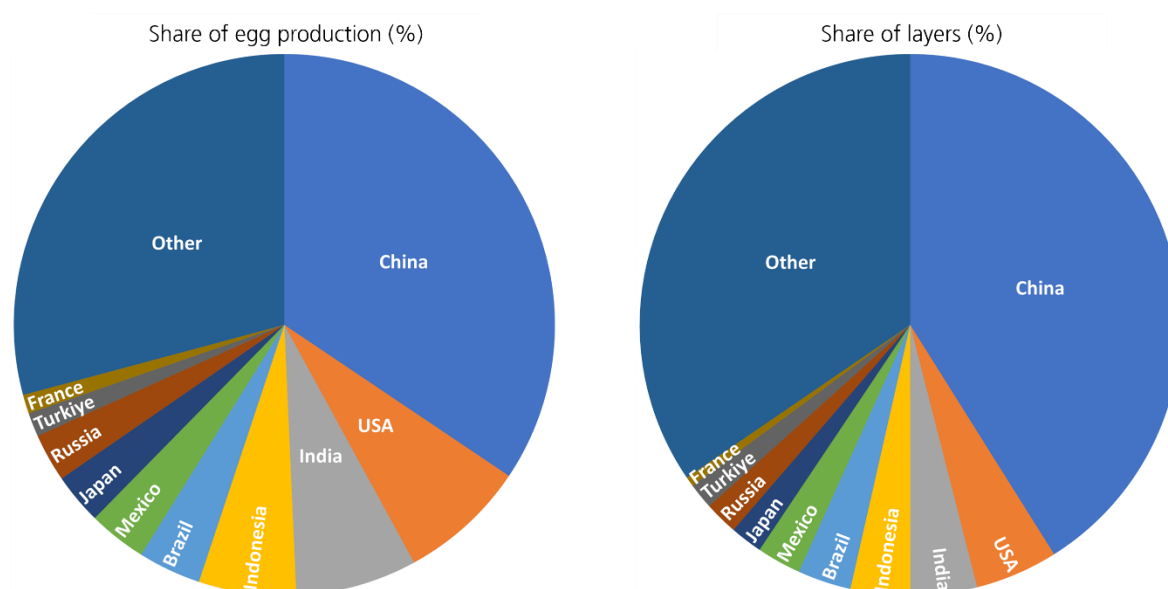


Figure 1. The main global egg producing countries by share of global hen egg production and share of global laying hen flock (%) in 2020. Source: FAOSTAT¹

ⁱ Throughout this document, 'China' refers to mainland China (excluding Hong Kong, Taiwan and Macao).

Table 2. Top 10 egg producing companies globally. Source: Clements (2022)².

Company	Country	Layers (millions)
Cal-Maine Foods	USA	46.8
Proteina Animal (PROAN)	Mexico	36.0
Rose Acre Farms	USA	27.6
CP Group	Thailand	22.0
Beijing Deqingyuan Agricultural Technology Co. Ltd	China	20.6
Hillandale Farms	USA	20.0
Ise Inc.	Japan	20.0
Versova Holdings L.L.P.	USA	20.0
Arab Company for Livestock Development (ACOLID)	Saudi Arabia	15.3
Daybreak Foods	USA	14.5



Five of the top ten egg producing companies are based in the USA, including the largest – Cal-Maine Foods with 46.8 million layers

Due to the relatively short shelf life, international trade in shell eggs is relatively limited compared with poultry meat and other meats, with **less than 2.5% of global egg production exported in 2020¹**. In addition to around 2 million tonnes of shell eggs, more than 350,000 tonnes of liquid egg and more than 70,000 tonnes of dried egg were exported globally in 2020¹.

For fresh shell egg gross exports in 2020, the Netherlands is the largest exporter (around 415,000 tonnes with a value of US\$738 million) (Fig. 2) mainly to Germany (70.6%), Belgium (11.7%), and Switzerland (5.0%)¹.

For fresh shell egg gross imports in 2020, the largest importers are Germany and the Netherlands (Fig. 2). Germany imported around 382,000 tonnes with a value of US\$ 630 million, mainly from the Netherlands (75.4%), Poland (8.9%), and Belgium (5.1%)¹. The Netherlands imported around 261,000 tonnes with a value of US\$ 393 million, mainly from Germany (40.7%), Belgium (22.3%) and Poland (15.8%)¹. The Netherlands imports eggs for both export and further processing³.

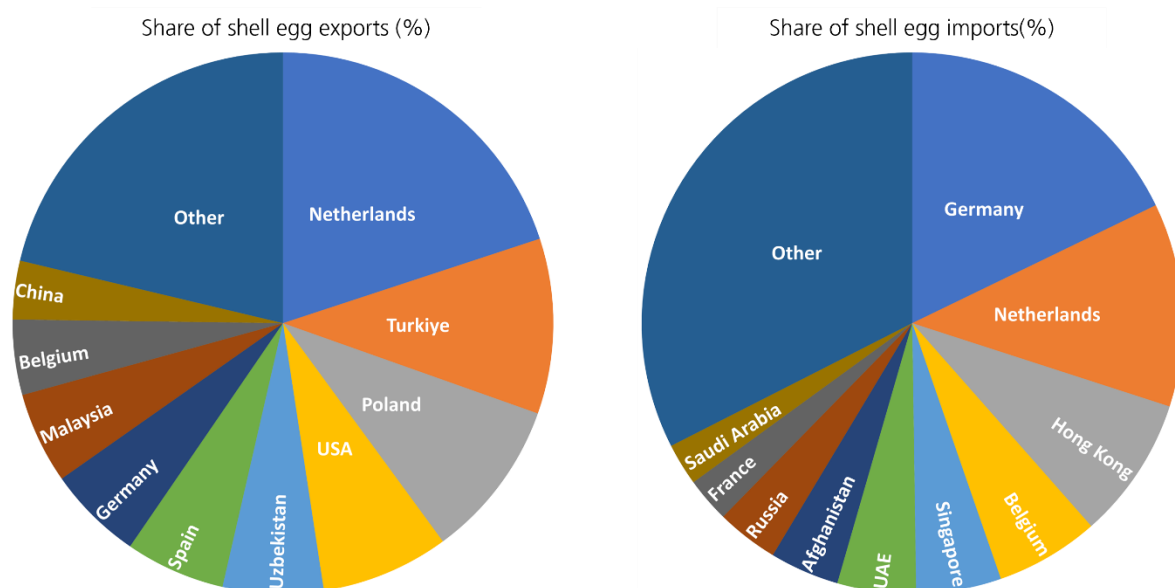


Figure 2. The main global exporters and importers of shell eggs by share of the market (% of tonnage) 2020. Source: FAOSTAT¹

CONSUMPTION

More than 88 million tonnes of eggs were consumedⁱⁱ globally in 2019, with China accounting for more than a third (37%) of the total (Table 3). Per capita egg consumption is highest in Hong Kong/Macao/China at >20 kg eggs per person per year¹. Per capita consumption has increased by 14% over the past decade globally, to around 10 kg eggs per person per year (Table 3).

Table 3. Top 10 egg consuming countries globally. Source: FAOSTAT¹.

Country	Eggs total consumption 2019 (thousand tonnes)	Eggs per capita consumption 2019 (kg/cap/yr)	Eggs per capita consumption 2010 (kg/cap/yr)	Percentage change in per capita consumption 2010-2019 (%)
World	88,152	10.03	8.79	14.1%
China	32,964	20.81	18.21	14.3%
USA	6,446	16.43	14.02	17.2%
Indonesia	5,141	15.25	4.43	244.2%
India	4,921	3.05	2.32	31.5%
Brazil	3,314	12.52	8.32	50.5%
Mexico	2,998	20.33	18.13	12.1%
Japan	2,665	19.93	18.89	5.5%
Russia	2,594	16.62	14.99	10.9%
Thailand	1,089	12.07	11.47	5.2%
Germany	1,086	12.03	12.26	-1.9%

EGG PRODUCTION IN DIFFERENT SYSTEMS

An estimated 84.2% of commercial laying hens globally are housed in cages (Fig. 3), mostly conventional (barren) cages. Enriched cages are used in the EU and some other countries (see below). Globally, 12.4% of commercial layers are housed in indoor cage-free systems, which include floor (barn) systems and multi-tier/aviary systems. Free-range and organic systems are used for 3.4% of commercial layers globally (Fig. 3). Some hens are also kept in backyard flocksⁱⁱⁱ, which account for an estimated 7.3% of total global egg production⁴.

AFRICA: Production is dominated by smallholdings, most of which do not use cages. Of the 200 million laying hens in commercial production systems in Africa, however, an estimated 60.7% are caged (Fig. 3), while 36.2% are kept in indoor cage-free systems. In Nigeria, Africa's largest egg producer, 58% of the 45 million hens are kept in cage-free floor systems⁵. Backyard production is estimated to contribute 41.3% of egg production in Sub-Saharan Africa and 6% in the West Asia/North Africa region⁴.

ASIA AND OCEANIA: An estimated 89.2% of commercial egg production is from conventional cages, with just 1.4% of hens in free-range and organic systems (Fig. 3). Backyard systems are estimated to make up 21.5% of egg production in South Asia, 6% in West Asia/North Africa, 4.6% in East Asia, and 2.1% in Oceania⁴.

ⁱⁱ Egg consumption – here and throughout consumption is measured as the total supply available for human consumption.

ⁱⁱⁱ FAO defines backyard systems as: Production that is mainly subsistence-driven or for local markets, displaying animal performance lower than in commercial systems and mostly relying on swill and locally-sourced materials to feed animals (less than 20 percent of purchased concentrate).

EUROPE: In 2020, 64.7% of the estimated 623 million hens in Europe were in cages (conventional cages in many non-EU countries), 20.7% in non-cage indoor systems, and 14.6% had access to the outdoors (Fig. 3). In 2021, among EU member states, 44.9% of hens were kept in enriched cages, 35.6% in indoor non-cage systems, 12.8% free-range, and 6.6% organic (data include hens in flocks of >350 birds) (Fig. 3). Backyard systems are estimated to contribute 28.9% of egg production in Eastern Europe, 1.7% in Russia, and 0.8% in Western Europe⁴.

LATIN AMERICA: An estimated 91.5% of commercial egg production is from conventional cages, with just 0.9% of hens in free-range and organic systems (Fig. 3). 6.9% of eggs are estimated to come from backyard systems in Central and South America⁴.

NORTH AMERICA: As of September 2022, 65.8% of the US laying flock was in cage systems (Fig.3), with the remaining 34.2% housed in cage-free systems, predominantly indoor aviary systems⁵.

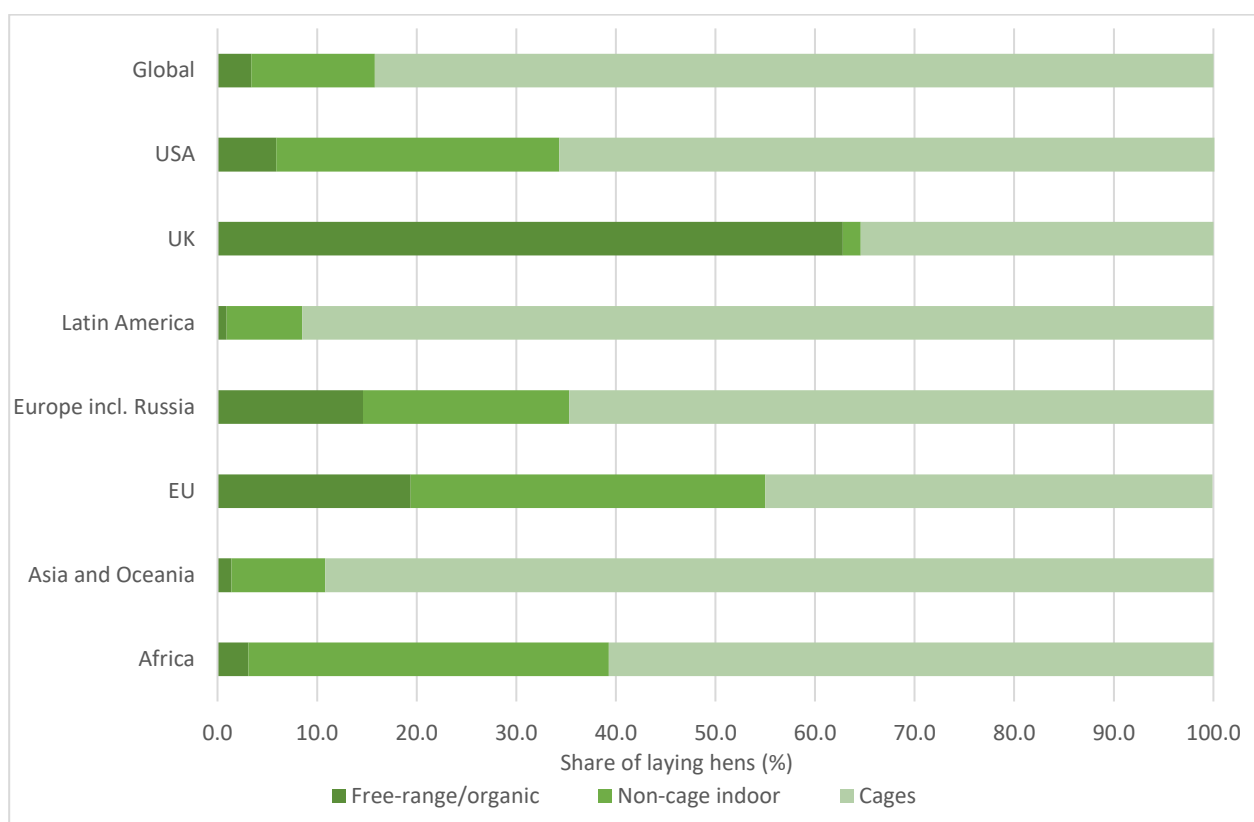


Figure 3. Estimated proportion of commercial layers in free-range/organic, non-cage indoor, and cage systems globally and in various countries/regions. Data for some countries (e.g., UK) relate to share of eggs produced rather than share of laying hens, but data are expected to be roughly equivalent. For USA, 'free-range/organic' represents organic only and 'non-cage indoor' represents all non-cage non-organic systems. Source: Guyonnet (2022)⁵, except EU⁶, UK⁷, and USA^{8,9}.

PRODUCTION COSTS






Production costs around the world vary making it difficult to estimate the cost of transition to cage-free systems. However, in Europe, based on the situation in Northwest Europe (in Spring 2020), Wageningen Economic Research calculated that in comparison to caged systems, production costs for barn systems were 16% higher, while free-range production costs were 31% higher¹⁰. Based on the experience in the Netherlands, this increased cost can be compensated for in the selling price¹⁰.

Costs of primary production (pence per kilogram of eggs) predominantly come from feed (between 38-52% in caged systems¹¹) with the remainder split between the hen, the housing, labour and other costs¹¹. Production costs across all systems have risen in recent years due to increases in the cost of feed, increased biosecurity measures due to avian influenza, increased packaging costs, and rising fuel and energy costs among others¹².

LEGISLATION

Conventional battery cages have been prohibited in the EU (and UK) since 2012 and have been, or are being, phased out in Iceland (2021), New Zealand (2022), Mexico (2024), Israel (2029), Australia (2036), Canada (2036), and some US States (see below). Some bans focus on caged production while others also include the sale of eggs produced in caged systems (regardless of origin). Additionally, some European countries have an existing ban on all caged systems (including enriched cages) – Austria, Switzerland, and Luxemburg have full bans, while France has banned the installation of new caged systems¹³. Upcoming bans on all caged systems are planned for Germany (2025), Czech Republic (2027), and Slovakia (2030)¹³.

See below for overview of key legislation in selected countries.

	Minimum standards for the protection of laying hens in the UK are laid down in The Welfare of Farmed Animals (England) Regulations 2007 (and related Regulations in other parts of the UK), which include a ban on conventional battery cages.
	Minimum standards for the protection of laying hens in the EU are laid down in Council Directive 1999/74/EC (as amended) which includes a ban on conventional battery cages. Some individual Member States and some other European nations have completely prohibited cages (for further details of key requirements of legislation in Europe see 'Information Sheet 1 – Egg Production in the EU & UK').
	There is currently no specific legislation establishing minimum welfare standards for laying hens in the USA. As of 5 October 2022, ten US States have passed legislation to end the use of battery cages, including Arizona, California, Colorado, Massachusetts, Michigan, Nevada, Oregon, Rhode Island, Utah, and Washington ^{14,15} .
	Brazil has general anti-cruelty legislation but there is currently no specific legislation establishing minimum welfare standards for laying hens in Brazil.
	There is currently no specific legislation establishing minimum welfare standards for laying hens in China.

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- ¹³ Eurogroup for Animals (2022) Bye bye cages! The legality of an EU ban on the sales of meat and eggs produced from caged animals including imported food. Report published by Eurogroup for Animals in March 2022. <https://euagenda.eu/upload/publications/2022-03-15-20-20bye-20bye-20cages-20report-20-20english-20final.pdf>
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