Patterns and dynamics of global and EU poultry meat production and trade

Hans-Wilhelm Windhorst, Vechta, Germany

Introduction

Between 1990 and 2009, global poultry meat production increased by over 50 mill. t or 123 %. No other agricultural product reached such a remarkable relative growth rate. The growth was not homogeneous, however, the highest absolute increase can be found in Asia with 21 mill. t , followed by South and Central America with 12.3 mill. t and North America with 10.5 mill t. In Europe, the absolute increase was much smaller with only 4 mill. t. In the same time period poultry meat production in the EU (27) grew by 4 mill. t or 50.9 %. The contribution of European countries to the global production volume decreased from 28.7 % in 1990 to only 17.2 % in 2009.

In 2008, the traded volume of poultry meat was more than five times higher than in 1990 and reached almost 14 mill. t. The share of North American, South and Central American as well as European countries in poultry meat exports was almost equal, with North America in a leading position. In poultry meat imports, European and Asian countries shared almost the same volume. Together, countries in these two continents imported almost 81 % of all poultry meat that reached the world market. EU (27) member countries exported 2.9 mill. t of poultry meat in 2008 and imported 2.3 mill. t. When canned meat and preparations are included, the export volume even reached 3.8 mill. t.

The main goals of this paper are:

- to give an overview about the development of global and EU poultry meat production between 1990 and 2009 by meat type,
- to identify the leading countries in production,
- to characterize changing patterns of poultry meat trade between 1990 and 2008 by regions and meat type,
- to identify the leading countries in poultry meat exports and imports by meat type.

Development of global poultry meat production between 1990 and 2009

Global poultry meat production increased from almost 41 mill. t in 1990 to 91.3 mill. t in 2009 or by 123 %. As can be seen from the data in table 1, the production volume of chicken meat grew by over 44 mill. t. Chicken meat contributed 87.8 % to the absolute growth, turkey meat 3.2 %, duck meat 5.2 %, goose and guinea fowl meat 3.7 % and other poultry meat 0.1 %. Chicken meat contributed 87.2 % to the overall poultry meat production in 2009, followed by turkey meat (5.8 %) and duck meat (4.2 %).

Table 1: The development of global poultry meat production by meat type between 1990 and 2009; data in 1,000 t (Source: FAO database)

Meat type	1990	2000	2009	Increase (%)
Chicken	35,350	58,307	79,596	125.2
Turkey	3,717	5,071	5,320	43.1
Duck	1,232	2,868	3,845	212.1
Goose*	621	1,911	2,476	298.7
Other	17	41	71	317.6
Total	40,937	68,198	91,308	123.0

* includes guinea fowl

Table 2: Development of global poultry meat production between 1990 and 2009 by continents; data in 1,000 t (Source: FAO database)

Continent	1990		2000		2009	
	1,000 t	%	1,000 t	%	1,000 t	%
Africa	1,979	4.8	2,982	4.4	3,821	4.2
Asia	9,965	24.3	22,480	33.0	31,120	34.1
N America*	12,285	30.0	19,349	28.4	22,798	25.0
SC America	4,465	10.9	10,735	15.7	16,808	18.4
Europe	11,759	28.7	11,885	17.4	15,721	17.2
Oceania	483	1.2	767	1.1	1,039	1.1
World	40,937	100.0	68,198	100.0	91,308	100.0

*Canada, Mexico, USA

Table 2 reveals the remarkable regional shift that occurred parallel to the absolute and relative growth rates. Whereas European countries lost 11.5 % of their former contribution to global poultry meat production in the analysed time period, the share of Asian countries grew by 9.1 % and that of South and Central American countries by 7.5 %. North America, which was in leading position in 1990 with a share of 30 %, lost 5 % and only ranked second behind Asia.

A closer look at the development of the two leading meat types shows (tables 3 and 4) that in chicken meat production Asian countries ranked only on third place behind North American and European countries in 1990. Because of the dynamic development in Asia and South and Central America, Europe only ranked as number four in 2009 with 16.8 %. In turkey meat production, the regional shift was less dramatic. North American countries are still in an absolutely leading position with a share of 51.7 %, followed by European countries with 32.3 %. The highest relative growth rate could be observed in South and Central America with 496 %. In contrast to chicken meat turkey meat production is still only of minor importance in Asia. Consumption of this meat type has no tradition in South and Eastern Asia.

Table 3: Development of global chicken meat production between 1990 and 2009; data in 1,000 t (Source: FAO database)

Continent	1990		2000		2009	
	1,000 t	%	1,000 t	%	1,000 t	%
Africa	1,849	5.2	2,780	4.8	3.571	4.5
Asia	8,524	24.1	18,241	31.3	25.443	32.0
N America*	10,015	28.3	16,673	28.6	19.972	25.1
SC America	4,347	12.3	10,482	18.0	16.210	20.4
Europe	10,162	28.7	9,400	16.1	13.410	16.8
Oceania	454	1.3	732	1.3	989	1.2
World	35,350	100.0	58,307	100.0	79.596	100.0

*Canada, Mexico, USA

Table 4: Development of global turkey meat production between 1990 and 2009; data in 1,000 t (Source: FAO database)

Continent	1990		2000		2009	
	1,000 t	%	1,000 t	%	1,000 t	%
Africa	39	1.0	76	1.5	120	2.3
Asia	79	2.1	167	3.3	121	2.3
N America*	2,201	59.2	2,595	51.2	2,748	51.7
SC America	97	2.6	236	4.7	578	10.0
Europe	1,277	34.4	1,970	38.8	1,716	32.3
Oceania	25	0.7	26	0.5	38	0.7
World	3,717	100.0	5,071	100.0	5,320	100.0

*Canada, Mexico, USA

Over 50 % of global poultry meat production were contributed by the three leading countries in 2009 (table 5). The USA was still in a leading position with a share of 20.8 % but it may have already been surpassed by China in 2010 according to a FAO-OECD Outlook.

Of the ten leading countries, listed in table 5, four were located in Asia, three in the Americas and three in Europe.

Table 5: The ten leading countries in global poultry meat production in 2009; data in 1,000 t (Source: FAO database)

Country	1,000 t	%
USA	18,953	20.8
China	16,438	18.0
Brazil	10,385	11.4
Mexico	2,633	2.9
Russia	2,360	2.6
France	1,720	1.9
Iran	1,682	1.8
United Kingdom	1,652	1.8
Indonesia	1,435	1.6
Japan	1,394	1.5
10 countries	58,652	64.2
World	91,398	100.0

The dynamics of poultry meat production in the EU between 1990 and 2009

In 2009, poultry meat production reached a volume of 11.9 mill. t, 4 mill. t more than in 1990 (table 6). Chicken meat contributed 81.2 % to the overall production volume, followed by turkey meat with 14.3 %. The highest relative growth rate could, however, be observed in duck meat production, mainly a result of the dynamic development in Germany and Hungary.

In 2009, six EU member countries produced more than 1 mill. t of poultry meat (table 7). France was in a leading position with a contribution of 14.4 % to the overall production volume of EU countries, followed by the United Kingdom with 13.9 % and Germany with 11.0 %. The regional concentration of poultry meat production in the EU was quite high for the ten leading countries contributed 86.2 %.

Table 6: Development of poultry meat production in the EU (27) by meat type between 1990 and 2009; data in 1,000 t (Source: FAO database)

Meat type	1990	2000	2009	Change (%)
Chicken	6,355	8,192	9,670	+ 52.2
Turkey	1,229	1,950	1,699	+ 38.2
Duck	223	401	467	+ 109.4
Goose*	86	79	75	- 12.8
Other	3	3	3	+/- 0
Total	7,896	10,625	11,914	+ 50.9

* includes guinea fowl

Table 7: The ten leading EU member countries in poultry meat production in 2009; data in 1,000 t (Source: FAO database)

Country	1,000 t	%
France	1,720	14.4
United Kingdom	1,652	13.9
Germany	1,316	11.0
Spain	1,205	10.1
Poland	1,155	9.7
Italy	1,154	9.7
Netherlands	834	7.0
Belgium	475	4.0
Hungary	387	3.2
Romania	371	3.1
10 countries	10,269	86.2
EU (27)	11,914	100.0

The data published by MEG (2010) differentiate between broiler meat and turkey meat production, whereas the FAO only shows data for chicken meat and turkey meat.

The data in table 8 shows that the ranking in broiler meat production differed considerably from that in poultry meat. The United Kingdom ranked on first place in 2009 with a production volume of 1.27 mill. t or 14.4 % of the overall broiler meat production in the EU. Spain (12.1 %), France (11.2 %), Germany (10.6 %) and Poland ranked on places two to four. It can be expected that because of the remarkable dynamics in Germany and the structural problems in France, Germany may have even surpassed France in 2010.

The regional concentration in EU turkey meat production was quite high in 2009. The ten leading countries contributed 86.3 % to the overall production volume. Five countries produced more than 100,000 t of this meat type with Germany and France in a leading position. These two countries alone shared 48.3 % of turkey meat production in the EU. The dynamics in these two countries differed considerably, however. Whereas in France the production volume decreased from 624,400 t in 2004 to 430,000 t in 2009 or by 31 %, turkey meat production in Germany grew from 391,000 t to 442,000. France lost large amounts of its former market shares whereas Germany could expand its export volume.

Table 8: The ten leading EU member countries in broiler meat production in 2009; data in 1,000 t (Source: MEG 2010)

Country	1,000 t	%
United Kingdom	1,269	14.4
Spain	1,063	12.1
France	990	11.2
Germany	930	10.6
Poland	890	10.1
Italy	729	8.3
Netherlands	640	7.3
Romania	320	3.6
Portugal	259	2.9
Belgium	255	2.9
10 countries	7,345	83.4
EU (27)	8,802	100.0

Table 9: The ten leading EU member countries in turkey meat production in 2009; data in 1,000 t (Source: FAO database)

Country	1,000 t	%
Germany	442	24.3
France	430	23.8
Poland	285	15.7
United Kingdom	157	8.6
Hungary	110	6.1
Portugal	38	2.1
Ireland	28	1.5
Spain	28	1.5
Netherlands	26	1.4
Austria	25	1.4
10 countries	1,569	86.3
EU (27)	1,818	100.0

Dynamics and pattern of global poultry meat trade

A complete data set for poultry meat exports and imports on the global level is only available for 2008. Table 10 shows the development of poultry meat exports and imports by meat type between 1990 and 2008. One can easily see that chicken meat shared about 75 % of the traded volume in 2008, followed by turkey meat with 7 %. It is also worth mentioning that the amount of canned meat and preparations increased considerably in the analysed time period. Exports and imports of duck and goose meat were of minor importance.

A closer look at the share of the contribution of the continents to poultry meat exports and imports in 2008 reveals considerable differences. In exports, the share of North America as well as South and Central America was very similar, followed by Europe. In Imports, Europe was in a leading position, followed by Asia. North America ranked as number three, a result of the high imports of Mexico.

Table 10: The development of global poultry meat exports and imports by meat type between 1990 and 2008; data in 1,000 t (Source: FAO database)

Exports				
Meat type	1990	2000	2008	Increase (%)
Chicken	2,201	6,888	10,404	372.7
Turkey	243	903	939	286.4
Duck	48	107	124	158.3
Goose*	3	48	46	1,433.3
Other**	182	835	2.416	1,227.5
Total	2,677	8,781	13,929	420.3
Imports				
Meat type	1990	2000	2008	Increase (%)
Chicken	2,163	5,932	9,601	343.9
Turkey	199	774	912	358.3
Duck	63	165	156	147.6
Goose*	22	50	31	40.9
Other**	206	823	2,159	948.1
Total	2,653	7,744	12,859	384.7

* includes guinea fowl
** canned meat and preparations

Table 11: Global poultry meat trade by continents in 2008; data in 1,000 t (Source: FAO database)

Continent	Exports 1,000 t	Share (%)	Continent	Imports 1,000 t	Share (%)
Africa	12	0.1	Africa	847	6.6
Asia	1,650	11.8	Asia	5,082	39.5
N America*	4,281	30.7	N America*	940	7.3
SC America	4,084	29.3	SC America	648	5.0
Europe	3,862	27.7	Europe	5,289	41.2
Oceania	39	0.3	Oceania	45	0.3
World	13,928	100.0	World	12,958	100.0

* Canada, Mexico, USA

At the country level (tables 12 and 13) it becomes obvious that in 2008 the regional concentration in exports was much higher than in imports. The ten leading exporting countries shared 88.1 % of the total export volume with the USA and Brazil in a leading position. These two countries contributed 56.5 % to global exports.

The ten leading poultry meat importing countries only shared 59.9 % of the import volume. China ranked as number one, followed by Russia and Japan. These three countries contributed 30.4 % to global poultry meat imports. The lower regional concentration in imports reflects on the one hand the fact that poultry meat is consumed also in countries which prohibit the consumption of pig meat because of religious taboos and on the other hand that in several developed, threshold and less developed countries the demand grew much faster than domestic production.

Table 12: The ten leading poultry meat exporting countries in 2008; data in 1,000 t (Source: FAO database)

Country	Exports	Share (%)
USA	4,089	29.4
Brazil	3,772	27.1
Netherlands	999	7.2
China (incl. Hong Kong)	819	5.9
Thailand	610	4.4
France	537	3.9
Germany	464	3.3
Belgium	378	2.7
United Kingdom	325	2.3
Poland	280	2.0
10 countries	12,273	88.1
World	13,928	100.0

Table 13: The ten leading poultry meat importing countries in 2008; data in 1,000 t (Source: FAO database)

Country	Exports	Share (%)
China (incl. Hong Kong)	1,782	13.9
Russia	1,229	9.6
Japan	889	6.9
Netherlands	718	5.6
United Kingdom	677	5.3
Mexico	638	5.0
Germany	636	4.9
Saudi Arabia	519	4.0
France	319	2.5
United Arab Emirates	298	2.3
10 countries	7,705	59.9
World	12,859	100.0

Dynamics and patterns of EU poultry meat trade

In the EU (27), poultry meat trade developed less dynamically than on the global level (table 14). Nevertheless, the export volume increased by almost 1.7 mill. t or 134.3 % between 1990 and 2008, the import volume by 1.5 mill. t or 188.7 %. Chicken meat contributed about 80 % to EU poultry meat export and imports in 2008, turkey meat 17 %. The trade of duck and goose meat was of minor importance.

Table 14: Development of poultry meat* trade by meat type in the EU (27) between 1990 and 2009; data in 1,000 t (Source: FAO database)

Exports				
Meat type	1990	2000	2008	Change (%)
Chicken	1,022	1,794	2,325	+ 127.5
Turkey	195	610	496	+ 154.4
Duck	27	65	68	+ 151.9
Goose**	1	23	28	+ 2,700.0
Total	1,245	2,492	2,917	+ 134.3
Imports				
Meat type	1990	2000	2008	Change (%)
Chicken	575	1,116	1,859	+ 223.3
Turkey	156	315	386	+ 147.4
Duck	42	52	51	+ 21.4
Goose**	32	35	28	- 12.5
Total	805	1,518	2,324	+ 188.7

* without canned meat and preparation
** includes guinea fowl

A closer look at the situation on the country level shows that the regional concentration in chicken meat exports (table 15) was considerably higher than in imports (table 16).

Table 15: The ten leading EU member countries in chicken meat exports in 2008; data in 1,000 t (Source: FAO database)

Country	Exports	Share (%)
Netherlands	684	29.4
France	343	14.8
Belgium	317	13.6
United Kingdom	218	9.4
Germany	206	8.9
Poland	153	6.6
Denmark	77	3.3
Spain	72	3.1
Italy	54	2.3
Hungary	35	1.5
10 countries	2,159	92.9
EU (27)	2,324	100.0

The Netherlands dominated chicken meat exports with a share of 29.4 %, followed by France and Belgium. Germany ranked as number 5 in 2008, but the fast increase of broiler meat production since 2005 has led to a self sufficiency rate of 107 % and growing exports. It can be expected that the export volume will have surpassed that of the United Kingdom in 2009 and may have come close to that of France. Poland could strengthen its position as one of the leading exporting countries, a result of foreign investments in the Polish poultry industry.

At first glance it seems surprising that The Netherlands also ranked as number one in chicken meat imports in 2008 with a share of 21.9 %. This is due to the fact that the FAO data include imports of live birds. A considerable share of the broilers slaughtered and further processed in The Netherlands are grown just across the border in Germany. The four leading chicken meat importing countries shared 61.9 % of all chicken meat imports. Besides the intra-EU trade large amounts of chicken meat were also imported into the EU from Brazil and Thailand, mainly chicken breasts.

Table 16: The ten leading EU member countries in chicken meat imports in 2008; data in 1,000 t (Source: FAO database)

Country	Exports	Share (%)
Netherlands	408	21.9
United Kingdom	297	16.0
France	230	12.4
Germany	216	11.6
Belgium	98	5.3
Romania	86	4.6
Spain	80	4.3
Ireland	46	2.5
Czech Republic	43	2.3
Greece	41	2.2
10 countries	1,545	83.1
EU (27)	1,859	100.0

In the EU, France dominated turkey meat exports for several decades. Because of the drastic reduction of the production volume, exports decreased from 230,000 t in 2004 to only 110,000 t in 2008. Whereas France contributed 40 % to the EU exports in 1990, its share was as low as 22 % in 2008. Parallel to this decrease, German turkey meat export grew from 57,000 t to almost 80,000 t in the same time period. Poland could also strengthen its position among the top turkey meat exporting countries. In 2008, it ranked second behind France with an export volume of slightly over 80,000 t.

In spite of the considerable increase in production, Germany was the leading EU member country in turkey meat imports with a share of 24.4 %, followed by The Netherlands with 10.1 %. In The Netherlands, the last turkey slaughterhouse was closed in 2009 so that this country now has to import all turkey meat for domestic consumption. There are still several growers but it will be only a matter of time until they switch to broiler production.

The different dynamics in broiler and turkey meat production in France and Germany has several reasons. On the one hand, German broiler growers and processors are operating in a growing domestic and export market which enabled investments in primary production, slaughtering and further processing. Many of the facilities were built during the last decade and installed the latest available technologies. The average size of recently built growing houses is 40,000 to 80,000 places. In contrast, producers in France had to operate in a rapidly shrinking market with low margins. Many of the growing houses are old and small and the slaughterhouses as well as the further processing plants were not able to finance the most recent technological equipment. So it can be expected that France will lose further market shares.

The main results of the preceding analysis can be summarized as follows:

- Global poultry meat production increased from 41 mill. t in 1990 to over 91 mill. t in 2009.
- Parallel to this dynamics, a remarkable spatial shift occurred. Asia as well as South and Central America gained market shares, Europe and North America lost in importance.

- The USA, China and Brazil contributed over 50 % to the volume of global poultry meat production.
- In the EU (27) poultry meat production grew from 7.9 mill. t in 1990 to 11.9 Mill. t in 2009 or by 54 %.
- France, the UK, Germany and Spain shared almost 50 % of the overall production volume.
- On the global level, poultry meat exports and imports showed a remarkable dynamics in the analyzed time period. The export volume reached almost 14 mill. t in 2008.
- North, South and Central American countries are leading in poultry exports, while European and Asian countries shared over 80 % of the import volume.
- The USA and Brazil dominated poultry meat exports. Imports were more widely distributed over many countries reflecting the worldwide increase of poultry meat consumption.
- The dynamics of poultry meat trade in the EU (27) was much slower than on the global level.
- The Netherlands, France and Belgium were the leading chicken meat exporting countries in 2008. In chicken meat imports, The Netherlands, United Kingdom, France and Germany ranked on places one to four with a combined share of almost 62 %.
- In turkey meat exports France still ranked as number one in spite of drastic losses of market shares, followed by Poland and Germany. In turkey meat imports, Germany ranked as number one, followed by The Netherlands.

Zusammenfassung

Muster und Dynamik der globalen Geflügelfleischproduktion und des Handels mit Geflügelfleisch

Zwischen 1990 und 2009 ist die weltweite Erzeugung von Geflügelfleisch von 41 mill. t auf 91 mill. t oder um 123 % angestiegen. Kein anderer Zweig der tierischen Produktion wies vergleichbare Steigerungsraten auf. Allerdings erfolgte die Zunahme in den einzelnen Kontinenten sehr unterschiedlich, was zu einschneidenden räumlichen Verlagerungsprozessen und zur Ausbildung neuer Zentren führte. Die höchste absolute Zunahme des Produktionsvolumens erfolgte in Asien mit 21 mill. t, gefolgt von Süd- und Mittelamerika mit 12,3 mill. t und Nordamerika mit 10,5 mill. t. Der relative Anteil Europas und Nordamerikas an der globalen Produktion hat deutlich abgenommen. Asien wurde, vor allem bedingt durch die schnelle Produktionsausweitung in China, zum neuen Zentrum. In der EU stieg das Produktionsvolumen im betrachteten Zeitraum um 4 mill. t oder nahezu 51 % an.

Im Jahr 2008 wurden weltweit etwa 14 mill. t Geflügelfleisch gehandelt, fünf mal mehr als 1990. Die Exportvolumina sind recht gleichmäßig auf die Kontinente Nordamerika, Süd- und Mittelamerika sowie Europa verteilt, wobei die USA und Brasilien eine führende Position einnehmen. Bei den Einfuhren dominieren europäische und asiatische Länder. Mitgliedsländer der EU (27) exportierten im Jahr 2008 etwa 2,9 mill. t Geflügelfleisch und importierten 2,3 mill. t. Auch hier sind es wenige Länder (Niederlande, Frankreich, Spanien, das Vereinigte Königreich und Deutschland), die den Handel bestimmen.

References

FAO database: http://faostat.fao.org

MEG-Marktbilanz: Eier und Geflügel 2010. Stuttgart 2010.

Author´s address

Prof. emeritus Dr. H.-W. Windhorst
Institute of Spatial Analysis and Planning
in Areas of Intensive Agriculture (ISPA)
University of Vechta
Driverstrasse 22, 49377 Vechta, Germany
hwindhorst@ispa.uni-vechta.de