

# Changes in the structure of

**Economic developments have changed the global structure of egg production. Leading countries of the seventies have seen their position taken over by lower-ranked countries. In this article we analyse the remarkable dynamics of the global egg industry over the past 35 years.**

By Prof Dr Hans-Wilhelm Windhorst, *Statistical Analyst, IEC and Institute of Spatial Analysis and Planning in Areas of Intensive Agriculture (ISPA), University of Vechta, Vechta, Germany.* (Email: hwindhorst@ispa.uni-vechta.de)

**G**lobal poultry meat and egg production, as well as trade with poultry products, have shown remarkable dynamic changes over the past 35 years. Between 1970 and 2005, poultry meat and egg production increased faster than beef, veal or pig meat production (Table 1). This is especially true for poultry meat.

In 1970, the production of poultry meat reached a volume of 15.1 million tonnes, whereas 38.3 million tonnes of beef and veal meat were produced worldwide. In 1995, poultry meat surpassed beef and veal production and, in 2005, the production volume of poultry meat was about 21 million tonnes higher. A comparison with pig meat shows that for both meat types, an increase of about 65 million tonnes could be realised. However, the gap in the production volume is still about 20 million tonnes smaller than in the late 1980s when it was as large as 28 million tonnes. Hen egg production tripled in the analysed time period and within a few years the production volume will be higher than that of beef and veal if the growth rates remain constant.



The trade volume of poultry meat increased much faster than production as can be seen from the data in Table 2. In 1970, only 521,000 tonnes of poultry meat were exported worldwide, and the volume increased to 9.7 million tonnes in 2004. In 1970, only 3.5% of the produced poultry meat reached the world market, whereas the share was 12% in 2004. This development is not parallel with trade in shell eggs. Here, the trade volume increased from 0.4 million tonnes, to 1.4 million tonnes

in the same time period. The share of exported hen eggs decreased from a peak of 2.8% in 1980 to 1.8% in 2004.

### The time-spatial dynamic of hen egg production

The changing contribution of developed and developing countries, as well as the regional shift between 1970 and 2005, (Table 3) show that in the first half of the 1990s, developing countries surpassed developed countries in their production volume and currently contribute over two thirds to global production.

Table 4 shows that growth in egg production has been very unbalanced. The only winning continent was Asia, whereas Europe and North and Central America lost considerable amounts of their former market share. In 1970, Europe was still the leading continent in egg production, but lost this position in the early 1980s. In 2005, Asia contributed over 60% to the global production volume; the share of Europe fell to 16.8% and that of North and Central America to 13.6%. South American countries, which had been

**Table 1 - Development of global meat and hen egg production between 1970 and 2005; data in 1,000 tonnes (FAO database)**

Year	Beef and veal	Pig meat	Poultry meat	Hen eggs
1970	38,349	35,799	15,101	19,538
1975	43,724	41,674	18,684	22,232
1980	45,551	52,683	25,965	26,215
1985	49,285	59,973	31,206	30,764
1990	53,363	69,873	41,041	35,232
1995	54,207	80,091	54,771	42,857
2000	56,951	90,095	69,191	51,69
2005	60,437	102,523	81,014	59,233
Increase (%)	57.6	186.4	436.5	203.2

# global egg production



**Table 2 - Development of exported poultry meat and hen eggs between 1970 and 2004 (FAO database, own calculations)**

Year	Exported poultry meat 1,000 tonnes	Export share %	Exported hen eggs 1,000 tonnes	Export share %
1970	521	3.5	404	2.1
1975	735	3.9	533	2.4
1980	1,538	5.9	744	2.8
1985	1,667	5.3	757	2.5
1990	2,677	6.5	830	2.4
1995	5,759	10.5	801	1.9
2000	8,78	12.7	942	1.8
2004	9,697	12.0	1,038	1.8
<b>Increase (%)</b>	<b>1,761.2</b>	<b>-</b>	<b>156.9</b>	<b>-</b>

**Table 3 - Development of hen egg production in developed and developing countries between 1970 and 2005; data in 1,000 tonnes (FAO database)**

Year	World	Developed countries	Developing countries	Share (%) of Developing countries
1970	19,538	14,866	4,672	23.9
1975	22,232	16,204	6,028	27.1
1980	26,215	17,95	8,265	31.5
1985	30,764	18,667	12,097	39.3
1990	35,232	18,977	16,255	46.1
1995	42,857	17,49	25,367	59.2
2000	51,69	18,263	33,427	64.7
2005	59,233	19,17	40,063	67.6
<b>Increase (%)</b>	<b>203.2</b>	<b>29.0</b>	<b>757.5</b>	<b>-</b>

**Table 4 - The changing contribution of the continents to global hen egg production between 1970 and 2005; data in % (FAO database, own calculations)**

Continent	1970	1990	2005
Africa	3.0	4.4	3.7
Asia	23.7	39.2	60.4
Europe	30.9	20.1	16.8
USSR	11.5	13.0	-
NC America	25.3	16.4	13.6
S America	4.3	6.3	5.1
Oceania	1.2	0.7	0.4
<b>World</b>	<b>*100.0</b>	<b>*100.0</b>	<b>100.0</b>

\* Sum does not add because of rounding

This article is the first of two, derived with permission from the presentation that Prof Windhorst gave at the IEC Spring Meeting held in March in London. At the meeting, Prof Windhorst, together with Peter van Horne of the Dutch Agricultural Economics Research Institute in Wageningen, the Netherlands, have been named IEC Economic Analysts. They succeed Mark Williams who could no longer combine the job with his responsibilities as chief executive with the British Egg Industry Council.

able to gain higher market shares until 1990, have not been able to hold their position in spite of an almost continuous growth of the production volume.

A comparison of the ten leading egg producing countries in 1970 and 2005 reveals that the regional concentration is higher than in poultry meat production (Table 5). In 2005, the ten leading countries contributed 72.4% to global egg production, whereas in 1970, six European countries were to be found in leading positions, and only one was left in 2005, being France. The five positions are now occupied by India, Mexico, Brazil, Indonesia and Turkey. It is worth mentioning that in 2005, almost half of the global egg production was located in China, India and Japan. In 1970, only one of the ten leading countries, China, was a developing country, and in 2005, already six of the top ranked countries were developing countries, according to the classification of the FAO. Four of them were located in Asia and two in Latin America. This further documents the regional shift of egg production from Europe to South and East Asia. ■

**Table 5 - The ten leading countries in hen egg production in 1970 and 2005 (FAO database)**

1970			2005		
Country	Production (1,000 t)	Share (%)	Country	Production (1,000 t)	Share (%)
USA	4,053	20.7	China	24,348	41.1
USSR	2,248	11.5	USA	5,33	9.0
Japan	1,766	9.0	India	2,492	4.2
China	1,533	7.8	Japan	2,465	4.2
Germany	1,162	5.9	Russia	2,054	3.5
United Kingdom	892	4.6	Mexico	1,906	3.2
France	658	3.4	Brazil	1,56	2.6
Italy	607	3.1	France	1,045	1.8
Spain	464	2.4	Indonesia	876	1.5
Poland	389	2.0	Turkey	830	1.4
<b>10 countries</b>	<b>13,722</b>	<b>*70.5</b>	<b>10 countries</b>	<b>42,906</b>	<b>*72.4</b>
<b>World</b>	<b>19,538</b>	<b>100.0</b>	<b>World</b>	<b>59,233</b>	<b>100.0</b>

\* Sum does not add because of rounding