

## THE AVIAN FLU IMPACT ON THE ROMANIAN POULTRY MARKET

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Poultry meat represents one of the most dynamic branches of the local meat production. The poultry sector represents a good quality protein source, at an acceptable price as compared to other animal production domains. There has been an ascending evolution of the sector after the year 2000, although there appeared a series of discontinuities that affected agricultural production, mainly on a short-term basis. The Avian Flu led to 190 million euros' worth losses at the level of Romanian national economy. Low consumption due to the impact was a short-term consequence, being rapidly amortized by the Romanian producers. The lack of some business continuity insurance measures can further affect the poultry meat sector, which does not have the necessary robustness needed in case of larger shocks. The following article proposes an analysis of the Avian Flu crisis economic effects on the Romanian meat sector, and it is part of a general framework of research regarding the Romanian food chain resilience to critical situations.

**Keyword: poultry, Avian Flu, meat, market, BCM**

**JEL Code: E2, M1, Q180**

### Introduction

Poultry meat production and consumption has lately recorded a positive evolution, being among the most dynamic sectors in the meat sector. Poultry meat is a food product which is perceived as dietary by most consumers. Some epidemics, like the Avian Flu or the Newcastle disease, have affected the local poultry meat production and the consumers' trust in these products.

### Materials and methods

The research carried out for this paper mainly used official reports of national (NSVFSA, USDA) or international organisations (OIE), with prerogatives in the field of food safety and animal health domain, reports of some well-known financial institutions (World Bank), which were analysed and interpreted according to the specialised literature. The statistical information was taken from the national (NIS) or international (FAO Stat, Eurostat) databases, and then processed and interpreted. The media information was verified on the basis of some credible sources. The cost-benefit analysis, carried out by the World Bank, represented a useful tool in assessing the Avian Flu's impact on the local sector.

### The spread of the Avian Flu

The most serious transmissible diseases, with a high degree of danger for the domestic and wild animals are the Avian Flu and the Newcastle Disease, which generate important economic losses due to a high death rate, to restrictions regarding bird movement and meat products. Besides these diseases, in confined production halls, specific to intensive poultry meat production, other infectious or parasitological diseases, specific to birds, can become manifest.

The recent outbreaks of Avian Flu in Europe (The Agriculture Gazette, 2014) have brought once again to the fore the effects felt by the local sector at the previous epidemic outbreaks. In this respect, measures have been taken, such as: monitoring or banning imports from the risk-prone areas (Germany, the Netherlands, and the UK), poultry periodic health status checking and intensifying controls regarding poultry farm biosecurity requirement appliance.

At a national level, The National Sanitary Veterinary and Food Safety Authority (NSVFSA) is responsible for the Avian Influenza Operational Manual and the Romanian National Contingency Plan

for Avian Influenza (NSVFSA, 2007). The programme implementation was achieved as a consequence of a loan from the world bank of 29.6 million euro (in the period 2006 – 2009), which completed the emergency help given by the EU to improve the surveillance for avian influenza in the country.

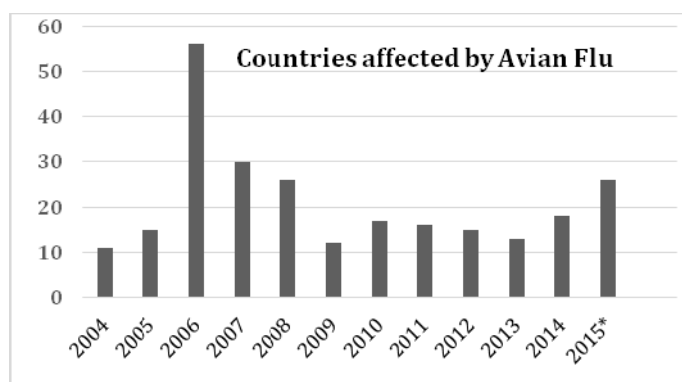


Figure 1. Countries affected By Avian Flu (2004 - April 2015)  
(Source of data OIE, 2015)

The 29.6 million euro were distributed for animal health domain measures (14.3 million euro), for population health domain measures (19.80 million), for Public Awareness and Communications (1.641 million), and 1.824 million euro for support, monitoring and evaluation, respectively. The Avian Flu is an infectious disease caused by a mutation of the Type A influenza virus, subtypes H5 and H7. Discovered 100 years ago in Italy, the Avian Flu spread all over the world, all the wild and domestic species of birds being exposed to it.

Migratory birds are the virus spreading natural source, which are more resistant to the virus than poultry. After WWII, the disease became manifest only sporadically, only 24 cases being recorded in the time period 1950 – 2000 (NSVFSA, 2014). The last 20 years brought back the disease and its virulent manifestation in 2004, affecting over 150 million birds.

According to the data provided by OIE (2015 a), from 2004 until April 2015, approximately 8,800 outbreaks of Highly Pathogenic Avian Influenza (subtype H5N1) in poultry in Asia, Africa, Europe and the Middle East have been recorded. The Asian area was the most affected, with 2,728 outbreaks recorded in Vietnam and 1,141 in Thailand. The situation of the countries affected by the Avian Flu is presented in figure 1. The year 2006, with 56 affected countries, represents the period with the most cases of Avian Flu, followed by the year 2007. In the first part of the year 2015 there have already been 26 countries in which the virus has been identified, equalling the situation from 2007.

According to the NSVFSA data (2014), in the interwar period, in Romania, 2 cases of Avian Flu are recorded in 1934 and in 1941, respectively at the slaughterhouse from Burdujeni, Suceava. Beginning with the year 2005, new outbreaks of the disease have been recorded in Romania, their evolution being presented in figure 2.

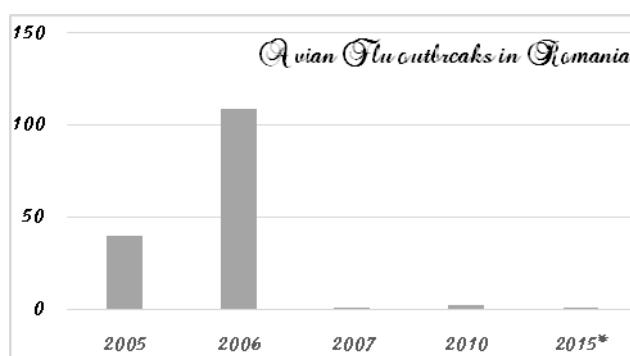


Figure 2. The Avian Flu outbreak evolution in Romania (2005-April 2015)  
(Source NSVFSA, 2014)

The year 2015 brought a notification regarding the existence of the H5N1 virus in Romania at a pelican colony in Dobrogea (OIE, 2015b). In the period monitored by OIE there have been 5 notification issued by Romania towards the international community, by means of the Avian Flu world alert system ( in the years 2005, 2006, 2007, 2010, 2015). The situation of the Avian Flu outbreak situation recorded in Romania, according to the data provided by NSVFSA (2014) and OIE (2015a) is presented in figure 2. In the monitored period there have been 153 outbreaks, with a maximum manifestation of the epidemic in the year 2010, with 109 cases. The most affected counties were Braşov, Prahova and Tulcea.

Table 1. The Avian Flu outbreak distribution on counties (Source NSVFSA 2014)

County	2005	2006	2007	2010	2015*	Total
Alba	0	1	0	0	0	1
Argeş	0	8	0	0	0	8
Bacău	0	8	0	0	0	8
Braila	12	0	0	0	0	12
Braşov	0	36	0	0	0	36
Buzău	5	2	0	0	0	7
Călăraşi	3	0	0	0	0	3
Constanta	1	0	0	0	0	1
Covasna	0	1	0	0	0	1
Gorj	0	3	0	0	0	3
Ialomita	8	0	0	0	0	8
Iasi	0	1	0	0	0	1
Mureş	0	1	0	0	0	1
Neamţ	0	1	0	0	0	1
Prahova	0	27	0	0	0	27
Tulcea	10	2	1	2	1	16
Vaslui	1	5	0	0	0	6
Vâlcea	0	2	0	0	0	2
Vrancea	0	9	0	0	0	9
Bucureşti	0	2	0	0	0	2
Total	40	109	1	2	1	153

Except for the areas transited by migratory birds, the epidemic outbreaks were recorded only once, the eradication measures taken avoiding further outbreaks in the following years.

Tulcea is the only county in which the disease was manifest every year when it was in Romania, due to the large population of wild migratory birds from the Danube Delta. The alert from 2015 concerned a pelican colony, the poultry not being affected.

### The poultry sector development in Romania at present

The decline of the primary production in Romania after the 1989 revolution affected all sectors, including the poultry meat one. Although a poultry sector modernising process was begun during the communist regime (1967 – 1970), which led to a production capacity of almost 28 kg of poultry meat/urban inhabitant, the poultry industrial growth in Romania was confronted with a number of organizational issues or with a lack of good genetic materials.

The low price import product competition, coming from countries with tradition or from countries which grant subsidies to poultry farmers, the fodder low-quality and quantity, the imports made at the limit of legality, the high death rate and the longer production cycle led to the collapse of the sector. The lack of some efficient measures from the part of the authorities emphasized this status, Romania becoming practically dependant on imports. The constant growth recorded after the year 2000 gave the Romanian poultry sector the fourth place in the world and the fourth place in Europe, due to the technical performances achieved in 2006.

Although production in the year 2013 records a plus of 4% as compared to 2012, reaching 325,500 tons, it is still 5% smaller as compared to 2008. Cumulated with the production for own consumption, the local poultry market is estimated at approximately 360,000 tons per year (OIE, 2006, World Bank 2013).

The year 2013 is the year in which imports are exceeded by exports, Romania's balance being a positive one. In livestock trading, imports, which are usually made for poultry raising, still exceed exports with almost 23 million euro. The import percentage in poultry meat domestic consumption

decreased from 31% in 2004 to 19% in 2013 (figure 3). A further decrease in point of domestic market dependence of up to 16% is forecasted in 2020 (Source AM PNDR, 2012).

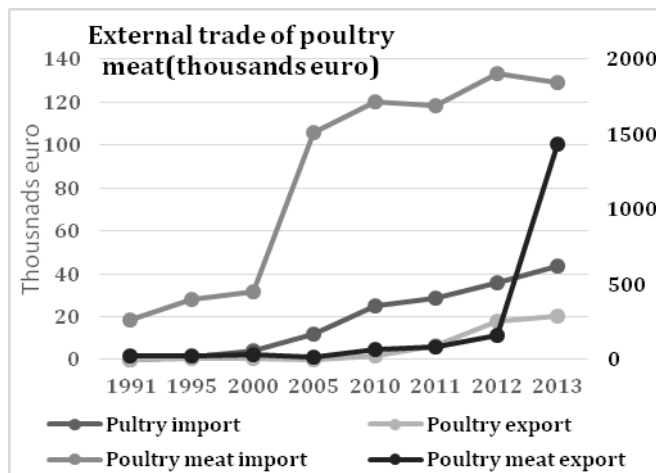


Figure 3. External trade of poultry and poultry meat  
(Source NIS, 2015)

Between 2001 – 2011, the total number of poultry reached a maximum in 2004 (87 million as compared to 71 million in 2001), but between 2004 – 2011 a descending trend was noticed, the total number of poultry reaching 80 million heads (AM PNDR, 2012). The quantitative growth in production was due to the use in poultry farms of some heavy races, raised for meat and weight increase at slaughter. The local sector for egg poultry raising developed with difficulty, the total egg production increasing in the period 2001 – 2011 with 5.4%. The majority of Romanian consumption is ensured by domestic production.

The main local poultry meat producers cover almost 45% of the market, having a turnover of over 550 million euro. Among these, only 17 companies record a profit, with a total value of 12 million euro in 2013. The share of the biggest poultry companies on the poultry meat market is presented in figure 4. Specific to big producers is the development of an integrated production system, in which the company has its own fodder manufacturing units, its own poultry farms, slaughterhouses, processing units and, in some cases, its own stores.

VAT increase on finished products is achieved only by means of slaughter, cutting, packaging and preservation. The big companies from the poultry domain have secondary processing sectors in which they obtain high-value meat products as compared to raw materials.

Another tendency, which was noticed on the market, is the use of own production brands differentiated on categories of products (Fragedo and Papane - Transavia, Coco Rico – Avicola Buzău or Family chicken, Happy chicken, Anti stress chicken – Avicola Bacău) (Stanciu, 2014).

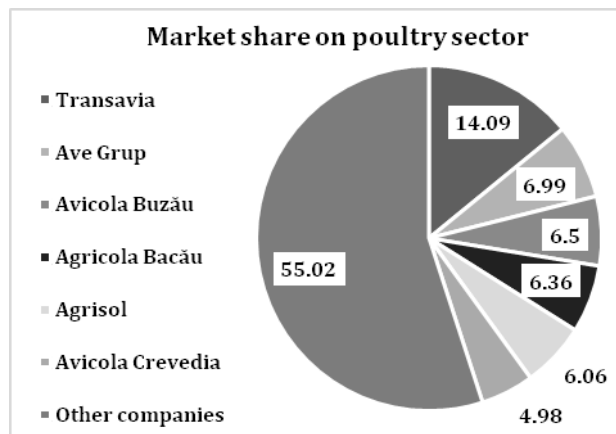


Figure 4. The market share of the main poultry sector companies (Source Pâlsu, 2014)

### The effects of the Avian Flu on the local poultry sector

The epidemic had direct effects on the poultry population (mainly on the population's households), on the meat and egg production and consumption and indirect ones on tourism and on other sectors.

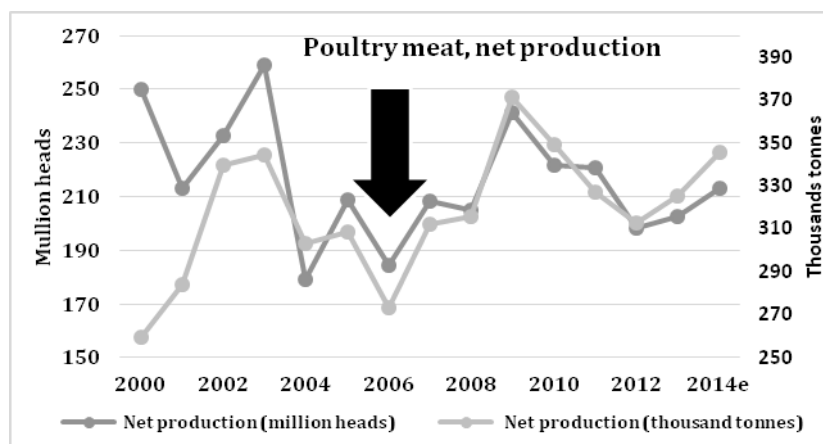


Figure 5. The effects of the Avian Flu on poultry number and production (Source NIS, 2015)

The Avian Flu led to a decrease in the number of poultry and in poultry meat production (figure 5), which was nevertheless overcome by local producers, taking into consideration the reduced production cycle from the poultry domain and live chicken imports.

The year 2008 records a production which was almost equal to the one obtained in the year 2004, previous to the epidemic outbreak.

Poultry meat consumption records a significant decrease from 2006 until 2008, with a minimum of 20kg./capita/year. The surveys conducted among consumers during the crisis highlighted their reluctance in purchasing poultry products. Losses in point of poultry meat consumption are also recorded by other national economies affected by the Avian Flu (Italy, the USA), but there were different approaches to the incident by the consumers (Beach et al, 2008).

In fact, official statistics show that from 2000 until 2014, only fish meat recorded a constant growth, without fluctuations, although it was fairly reduced. All the others types of meat had a fluctuating evolution due to the incidents from the sector. Figure 4 presents poultry meat consumption reduction from 2006 until 2008, due to the existing problems from the poultry sector.

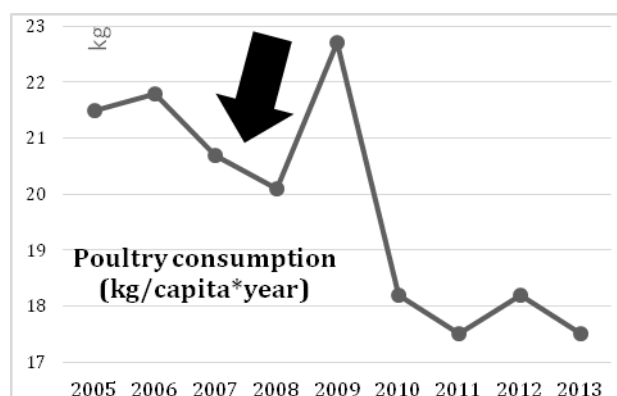


Figure 5. Poultry meat consumption evolution during the Avian Flu (Source NIS, 2015)

The cost-benefit analysis, carried out by the World Bank (2006), highlights other loss categories, connected to the poultry sector, such as the tourism sector one, assessed at 50 million euro. Overall, the losses recorded because of the Avian Flu epidemic were assessed at over 193 million euro (table 2).

Table 2. Fiscal impact and economic losses in the Romanian economy due to the Avian influenza outbreak, 2005-2006 (Euros '000) (Taken from World Bank Report, 2006)

Cost	Fiscal costs	Economic losses
<b>Loss of productive assets</b>		
Value of poultry culled (meat and eggs, at average 2005 prices)		12,908
Compensation to poultry holders	3900	
<b>Outbreak control and related expenditures</b>		
Outbreak operations (disinfection, culling, incineration of poultry etc.)	5,720	5,720
Prophylactic treatment with anti-viral medication (Tamiflu)	200	200
Vaccination of humans	1,041	1,041
Sanitary & protection equipment, information materials for protecting public health,	278	278
Road disinfection ("filters")	45183	45183
<b>Losses to the poultry industry due to interruption in production and collapsing markets</b>		
Production loss during the outbreak control period (disinfection and surveillance)		1,489
Drop in poultry demand (less sales)		15,400
Depressed prices (sales at lower prices)		28,00
Export ban		9,800
Extra storage costs		12,600
Extra disinfection costs for commercial farms		9,800
Delays in production flows		700
<b>Losses to other industries</b>		
Tourism		50,000
<b>Total losses</b>	<b>56,322</b>	<b>193,119</b>

### Conclusions

The Avian Flu outbreak highlighted the frailty of the local poultry sector, which, although recorded some progress in the last years, it didn't develop the necessary resilience to absorb strong shocks, such as animal epidemics. The subsequent manifestation of other critical incidents (the Newcastle Disease, the altered meat scandal or the turkey meat pollutants identified in the Romanian products for export) prove the lack/inefficiency of some measures taken to ensure business continuity in the animal production sector.

The poultry meat market has a low degree of concentration, the main competitors not going over the critical threshold of 50%. Although poultry meat consumption decrease was a drastic one during the crisis, the period from 2008 until 2009 led to a recovery of the recorded losses, a historical maximum for the Romanian market being recorded in 2009. The total losses associated with the Avian Flu for the time period October 2005 – May 2006, were estimated at 193 million euro. Together with the poultry producer direct losses there were some costs associated with the intervention of the authorities or the influence on some connected sectors, such as tourism, with estimated losses of 50 million euro. Although the crisis was a short one, consumer reluctance towards poultry products led to a decrease in request on the Romanian market of over 15 million euro. The critical incidents, such as the animal epidemics, impose the intervention of authorities and radical measures in order to prevent disease transmission among population.

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