

EVOLUTION OF AGRICULTURAL PRODUCTION IN THE CONTEXT OF WORLD ECONOMY GLOBALIZATION (2004-2012)

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Abstract

This paper seeks to present the evolution of agricultural production worldwide in circumstances of globalization for international trade in the present stage of socio-economic development, which amplify the structural interdependence for economies of different regions. For this purpose it starts from presenting the evolution of total agricultural production, after which the situation shall be liable for vegetable production and livestock production sector. The phenomena are emphasized through fixed-base indices which highlights their evolution, operating with a dynamic range of five terms: the average 2004-2006 (for comparison, in 2010, 2011 and 2012 and average 2010-2012.

Key words: evolution, crop production, livestock production, total production

INTRODUCTION

Globalization has become a concept used routinely at international meetings, this being determined by global integration of markets of goods, services and markets for all types of capital.

At least from a theoretical standpoint, globalization offers the possibility of larger markets - size - the possibility of a very wide range of products and services that are attracted onto the market and the possibility of attracting - in the less developed areas of economic strong inflows of financial capital [2].

General premises of globalization and globalization of markets mainly consist of: increasing the level of culture, while refining and standardizing consumer tastes; general access to global information as a result of the diffusion of technological progress and large telecommunications (Internet, e-commerce, etc.); the progressive reduction of trade barriers and tariffs; especially infrastructure development and all forms of international transport; regulating markets, as for instance the telecommunications and the aviation until recently constrained by restrictive laws on zonal operators work on these [3].

Agriculture is a strategic sector, vital and very important activity for Romanian economy [10].

It remains a huge resource comparative advantage potential of Romanian agriculture [8].

EU states have significant natural resources, human and capital to produce nearly all agricultural products needed by the population, and significant surpluses for export [9].

In this context it is worth noting that the role of agriculture in the modern economy is underlined by the functions carried out: to satisfy the food needs of the population; contribute to the employment of labor resources; contributing to better use of primary resources (natural and labor) and capital; supplying industry with raw materials; consuming industrial products contributing to industrial development; It helps to ensure ecological balance and preservation of the environment embellishment; help balance national balance of payments exports; helping to educate members of rural society; farmers as an important socio-economic force [7].

Unlike other activities of the national economy, agricultural production has a wealth of features, knowledge of which is essential

for organizing the work in this branch [4]. Agricultural output is influenced by its particularities: the earth acts as object of labor and means of labor; the disparity between labor time and production time; carrying out the production process in some natural conditions; combining economic reproduction process, the natural breeding process; Secondary production existence alongside the main production; reintroduction of part of the production obtained, into a new economic cycle; technological processes on large surfaces; how to advance production and cost recovery [1].

In the structure of agri-food, agriculture is the main provider of agricultural products food (eggs, fruit, and vegetables), raw materials for food processing [6].

MATERIALS AND METHODS

For paper, the authors called for adequate documentation using the indicator system proposed by FAO [11].

The study refers to the total agricultural production, crop production and livestock agricultural production. The indicators were analyzed overall and per capita, using as reference points situations recorded at continental level (Africa, the American continent called generic America although it includes both South America, North America and the Caribbean; Asia; Europe, Oceania includes Australia, New Zealand, Micronesia, Polynesia etc.) and in addition they finally analyze data on specific situations of the European Union (EU generic noted) and Romania.

Conducting the analysis covers the period of time between the years 2010 and 2012, to which was added the average period and a reference level represents the average of 2004-2006, thus creating a dynamic series consists of 5 terms.

The indices represent synthetic sizes which render variability - in time and space - of economic phenomena, being expressed - always - in relative units [5].

The paper did not use expression of absolute indicators, only their relative expression based

on indices (those with fixed base used most effectively), which highlights changes from the comparison period.

RESULTS AND DISCUSSIONS

Table 1 contains data related to the development of world agricultural production, which are presented data of total and per capita level.

a. Total production. In Africa in the year 2010, compared to term of reference, total agricultural output increased by 15.91 %, a trend that was maintained for the remaining terms of the dynamic series - + 18.58% in 2011, + 23.17 % for + 19.22 % in 2012 and for the period average. Therefore it can be appreciated the upward evolution of total agricultural production in the case of Africa.

The situation in America highlights strict values above par compared to term of reference in 2010, 2011, 2012 and period average (111.10, 111.72, 111.01 and 111.28 respectively %). As a result, for American continent, it is estimated that there is an oscillated total agricultural production over time.

At the level of Asian continent total agricultural production has surpassed the comparison term in a higher rates than for Africa and America, as follows: 1.18 times in 2010, 1.22 times as the average of the period 1.23 times for 2011 and 1.25 times for 2012.

In Europe we can talk about subunit values in the years 2010 and 2012 (98.93 % and 99.76% respectively) and above par values for 2011 and period average (5.17 % and 1.29% compared with the term of reference). The downward trend of the evolution for agricultural production is oscillating.

When referring to the situation recorded in Oceania can be observed the upward evolution of total agricultural production from 2010 to 2012 (102.05 %, 107.97 % and 115.73% beside the basis of comparison), then for average term, the reference value is exceeded by 8.58%.

Table 1. Agricultural production - Dynamics

No.	Specification	Y E A R				Average 2010-2012**
		Average 2004-2006*	2010*	2011*	2012*	
1.	Total production	-	-	-	-	-
1.1.	Africa	100	115.91	118.58	123.17	119.22
1.2.	America	100	111.10	111.72	111.01	111.28
1.3.	Asia	100	118.60	123.45	125.20	122.42
1.4.	Europe	100	98.93	105.17	99.76	101.29
1.5.	Oceania	100	102.05	107.97	115.73	108.58
1.6.	World level	100	112.80	116.69	116.94	115.48
1.7.	E U	100	98.73	101.17	96.27	98.72
1.8.	Romania	100	90.97	100.29	78.98	90.08
2.	Production per capita	-	-	-	-	-
2.1.	Africa	100	102.53	102.31	103.67	102.84
2.2.	America	100	105.26	104.75	103.03	104.35
2.3.	Asia	100	112.28	115.64	116.05	114.66
2.4.	Europe	100	97.95	104.00	98.56	100.17
2.5.	Oceania	100	93.61	97.52	103.01	98.05
2.6.	World level	100	106.26	108.63	107.60	107.50
2.7.	E.U.	100	96.99	99.12	94.09	96.73
2.8.	Romania	100	92.03	101.69	80.28	91.33

* <http://faostat3.fao.org/faostat-gateway/go/to/download/Q/QI/E>

** own calculation

General worldwide agricultural production evolves upward comparison level is exceeded by 12.8% in 2010, 16.69 % in 2011, 16.94 % in 2012 and 15.48 % for the average of the period.

For the EU total agricultural output has evolved unevenly, decreasing in the years 2010, 2012 and for period average beside comparison term (-1.27 %, -3.73 % and -1.28% respectively), but exceeding the reporting based only in 2011 (+ 1.17%).

For Romania, there is a fluctuating trend indicator level (compared to term of reference): -9.03 % in 2010, + 0.29 % for 2011, -21.02 % in 2012 and -9,92 % for the average of the period.

b. Production per capita. Total agricultural production per capita in Africa, known an uneven upward trend, the term comparison being exceeded by 2.53 % in 2010, 2.31 % in 2011, 3.67 % for 2012 and 2,84% for the average of the period.

The current situation in America highlighted above par values of this indicator during dynamical series (103.03 %, 104.35 % , 104.75 %, and 105.26 % in 2012, the average of the period 2011 and 2010 respectively). In this context we may mention that evolution is

one upward and uneven compared to term of reference.

If we consider to the situation in Asia, evolution of total agricultural production per capita is one similar to that recorded in Africa. So for comparison term has been exceeded, as follows: + 12.28 % in 2010, + 14,66 % for period average, + 15.64 % for 2011 and + 16.05 % in 2012.

In Europe, total agricultural output per capita is evolving unevenly decreases in 2010 (2.05 %), followed by growth in 2011 (+ 4.0%) and decreases in 2012 (-1.44%) and increases for average period (+ 0.17%).

At the level of Oceania, total agricultural production per capita recorded a maximum in 2012 (when the term of reference is exceeded by 3.01%) and minimum in 2010 (-6.39% over the reporting basis), the remaining terms of the series dynamical is smaller than the reference value. The overall situation highlights the global total agricultural production growth per capita over the period analyzed, exceedances of the reporting base being 1.06 times in 2010, 1.07 times in 2012 and for the period average, 1.08 times 2011. For the EU it is found that the comparison term was not even achieved during the period

analyzed, the differences compared to this being: -0.88 % in 2011, -3.01 % in the year 2010, -3, 27 % for average and -5.91 % for 2012.

If we analyze the specific situation of Romania is found that total agricultural output per capita has evolved unevenly. So, the basis for reporting is exceeded by 1.69 % in 2011, but this is not achieved for dynamical series remaining terms (-7.97 % in 2010, -8.67 % in the period average and -19, 72 % for 2012).

World agricultural evolution of production recorded in the vegetable sector is shown in the Table 2.

a. Total production. For Africa, crop production has evolved strictly upward, exceeding the comparison term being 1.14 times in 2010, 1.17 times for 2011 and 1.23 times in 2012. The average period exceeded 18.39 % the base of reporting.

When referring to the situation in America, we can say that based of reporting has been exceeded throughout the dynamical series, but

indicator has evolved descendant as follows: 12.89, 12.59, 10.82 and 12.10 respectively in the years 2010, 2011, 2012 and for period average.

At the level of Asian continent, the term of comparison is exceeded during the entire dynamical series (from 18.13 % to 25.54 % in 2010 and 2012), and the average exceeded 1.22 times the comparison term. As a result there is a continuous increase of the total plant production level.

Crop production in Europe have a different uneven time evolution, relative to the term of reference were registered both subunit levels and levels above par as follows: 94.29 % in 2010, 95.17 % for 2012, 98.37 % in the period average and 105.66 % in 2011.

Oceania, knows a minimum crop production in the year 2010 (105.37 % over the comparison base) and a maximum at the level of 2012 (134.27 %), its evolution over time can be regarded as one upwards.

Table 2. Crop production - Dynamics

No.	Specification	Y E A R				Average 2010-2012**
		Average 2004-2006*	2010*	2011*	2012*	
1.	Total production	-	-	-	-	-
1.1.	Africa	100	114.57	117.54	123.05	118.39
1.2.	America	100	112.89	112.59	110.82	112.10
1.3.	Asia	100	118.13	124.37	125.54	122.68
1.4.	Europe	100	94.29	105.66	95.17	98.37
1.5.	Oceania	100	105.37	119.80	134.27	119.81
1.6.	World level	100	113.06	118.37	117.78	116.40
1.7.	EU	100	95.27	99.57	90.79	95.21
1.8.	Romania	100	90.24	104.98	72.31	89.18
2.	Production per capita	-	-	-	-	-
2.1.	Africa	100	101.34	101.42	103.57	102.11
2.2.	America	100	106.94	105.55	102.84	105.11
2.3.	Asia	100	111.84	116.50	116.36	114.90
2.4.	Europe	100	93.36	104.48	94.02	97.29
2.5.	Oceania	100	96.59	108.13	119.45	108.06
2.6.	World level	100	106.50	110.20	108.37	108.36
2.7.	UE	100	93.59	97.55	88.72	93.29
2.8.	Romania	100	91.29	106.46	73.51	90.42

*<http://faostat3.fao.org/faostat-gateway/go/to/download/Q/QI/E>

** own calculation

The time evolution of global crop production is one oscillating, it increases in 2010 and 2011 by 13.06 % and 18.37 % compared to reporting term, and for 2012 growth is

reduced to 17.78 % and the average ahead 1.16 times the comparison base.

EU has an uneven evolution for the indicator, net unfavorable compared to term of

reference. Compared with it notes decreased by 4.73 % in 2010, 0.43 % for 2011, 9.21 % in 2012 and 4.79 % for the period average.

Romania is characterized by an uneven development levels of total crop production. So indicator decreased in 2010 by 9.76 % compared to reporting term, increased by 4.98 % in 2011, decreased by 27.69 % for 2012 and decreasing with 10.82 % for the average of the period.

b. Production per capita. In terms of crop production per capita at the African continent, that knows an upward trend in time, the term of comparison being exceeded during the entire dynamical series, as follows: + 1.34 % in 2010, + 1.42 % for 2011 + 3.57 % for 2012 and + 2.11 % in the period average.

America recorded above par values of the indicator in 2010-2012, but by decreasing trends (106.94 %, 105.55% and 102.84% respectively for 2010, 2011 and 2012). In these conditions there is an outrun for the period average of 1.05 times compared to the base of reporting.

If we refer to the situation in Asia, crop production per capita was higher to basis of reporting, during the entire dynamical series: 11.84% in the year 2010, 114.90% for the period average, 116.36% for the year 2012 116.50% for 2011. As a result, appear an indicator increase from 2010 to 2011, after which it drops to the level of 2012.

In Europe the crop production per capita have a different evolution unevenly over time - compared to the reference term - from 93.36% in 2010 to 104.48% in 2011, the average being 2.71 % lower base reporting.

Oceania is characterized by fluctuated over time crop production per capita, term of reference was exceeded in 2011, 2012 and period average (by 8.13 %, 19.45 % and 8.06% respectively), while the remainder, were recorded sub-par values (96.59% if 2010).

Overall global crop production per capita has registered just above par value (demotions of 1.06, 1.08 and 1.10 times the comparison term in 2010 and 2012 period average, respectively in 2011). Given this situation it can be concluded that there is recorded a fluctuations during the period.

EU crop production per capita has registered only subunit levels compared to reporting term - 93.59 %, 97.55 %, 88.72 % and 93.29% for the years 2010, 2011, 2012 and for period average (strictly downward trend).

Romania has an uneven evolution of the indicator, being characterized by the prevailing existence of indices below par levels (73.51% in 2012, 90.42% in the period average, 91.29% in 2010), except specific situation of 2011 (+ 6.46% over the reporting basis).

In the table 3 are shown the evolution of livestock production globally and per capita, for the period under review.

a. Total production. Animal production in Africa, known an upward trend over time during the period under review, compared to the reference term, recording annual rates from 119.82% to 123.52% in 2010 to 2012, average period being supra-unitary (+ 21.65%).

Romania has an upward trend of the indicator, the benchmark was not achieved, though, by any term of the dynamic series. Decreases beside the base of reporting were 7.83% in 2010, 7.45% for 2011, 10.03% for 2012 and 8.44% in the period average.

b. Production per capita. Livestock production per capita in Africa, known, versus term of reference values above par during the whole dynamic series. Advancing the reporting base were higher in 2010 (1.05 times), after which they decrease with the advancement time (1.04 times for 2011, 1.03 times the level of 2012).

America recorded regarding animal production level per capita, superior values beside the basis for comparison terms for all components of dynamical series. It is noteworthy that the exceedances were grouped within 0.64%, as follows: 3.07% for 2010, 3.27 % for 2012, 3.35 % in the period average and 3, 71% in 2011.

For Asia, the situation is similar to that mentioned above, except that the excedent of reference terms ranged from 1.13 times for 2010 to 1.15 times the level of 2012 (1.14 times average of the period) .

Table 3. Animal production - Dynamics

No.	Specification	Y E A R				Average 2010-2012**
		Average 2004- 2006*	2010*	2011*	2012*	
1.	Total production	-	-	-	-	-
1.1.	Africa	100	119.82	121.60	123.52	121.65
1.2.	America	100	108.77	110.59	111.25	110.20
1.3.	Asia	100	119.70	121.29	124.42	121.80
1.4.	Europe	100	104.04	104.64	104.83	104.50
1.5.	Oceania	100	100.14	101.15	105.04	102.11
1.6.	World level	100	112.35	113.78	115.47	113.87
1.7.	EU	100	102.34	102.84	102.00	102.39
1.8.	Romania	100	92.17	92.55	89.97	91.56
2.	Production per capita	-	-	-	-	-
2.1.	Africa	100	105.97	104.91	103.96	104.95
2.2.	America	100	103.07	103.71	103.27	103.35
2.3.	Asia	100	113.33	113.61	115.33	114.09
2.4.	Europe	100	103.02	103.47	103.56	103.35
2.5.	Oceania	100	91.88	91.39	93.52	92.26
2.6.	World level	100	105.84	105.93	106.26	106.01
2.7.	EU	100	100.54	100.76	99.70	100.33
2.8.	Romania	100	93.23	93.84	91.44	92.84

* <http://faostat3.fao.org/faostat-gateway/go/to/download/Q/QI/E>

** own calculation

The situation of livestock production per capita within Europe highlights exceedances levels compared to comparing base grouped into a tolerance of 0.54 %, as follows: 3.02 % in case of 2010, 3.35 % for period average, 3.47 % for 2011 and 3.56 % in 2012. As a result of these values can appreciate that indicator knows a continuous upward trend.

Oceania is characterized by a per capita livestock production, decreasing from 2010 to the average of the period - compared with the reporting term as follows: 8.12 % in 2010, 8.61 % in 2011, 6.48 % in 2012 and 7.74 % for period average.

Regarding the global situation of livestock production per capita, we can say that it is - on the whole - one upper reference limit (values above par being in all terms of dynamical series: 105.84 %, 105.93 %, 106.26 % and 106.01 % for 2010, 2011, 2012 and for the period average).

If we analyze the evolution of the indicator at EU level it appears both above par value and unitary values of dynamic indices as follows: 99.70 % in 2012, 100.33 % for the period average, 100.54 % in 2010 and 100.76 % for 2011. It is estimated that the indicator presents uneven developments in time.

Romania is characterized by strict upward trend of indicator, negative differences compared to reporting base being 6.16 % in 2011, 6.77 % for 2010, 7.16 % for average of the period and 8.56 % in 2012.

CONCLUSIONS

Total global agricultural production and per capita had an upward trends over time, a phenomenon mainly based on increases in America, Asia, Africa and Oceania, but also negatively influenced by declining characteristic of Europe. The largest increases are recorded in Asia in the year 2012 (+ 25.2 %) and lowest values are 98,93 % in Europe in 2010 - the total output.

In the EU and Romania, the evolutions are uneven, with the prevailing values of the sub unitary indices in dynamics. The two entities, not necessarily copying specific situation of the European continent, but neither presents a contrasting situation.

Concerning the total vegetable production, it can be seen that it is evolving similar to total agricultural output, kept aspect for obtained crop production per capita. Extreme limits are 94.29 % of variation for Europe in 2010 and

134.27 % for Oceania in 2012 - when referring to total crop production, while for crop production per capita, the variation limits are established at the same years and the same continents - 93.36 and 119.45 % respectively. If we look at specific situations for Romania and EU developments can be similar to those of the total production. Differences arise in the EU in 2011, where is recorded an indication below par.

For livestock production worldwide - overall and per capita, it is noted the positive developments general in time from 2010 to 2012, across all continents, except the situation recorded for total production and per capita in Romania.

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