

## STUDY UPON THE CONSUMPTION OF FOOD PRODUCTS IN ROMANIA - SIZES, STRUCTURE AND FACTORS OF CHANGE

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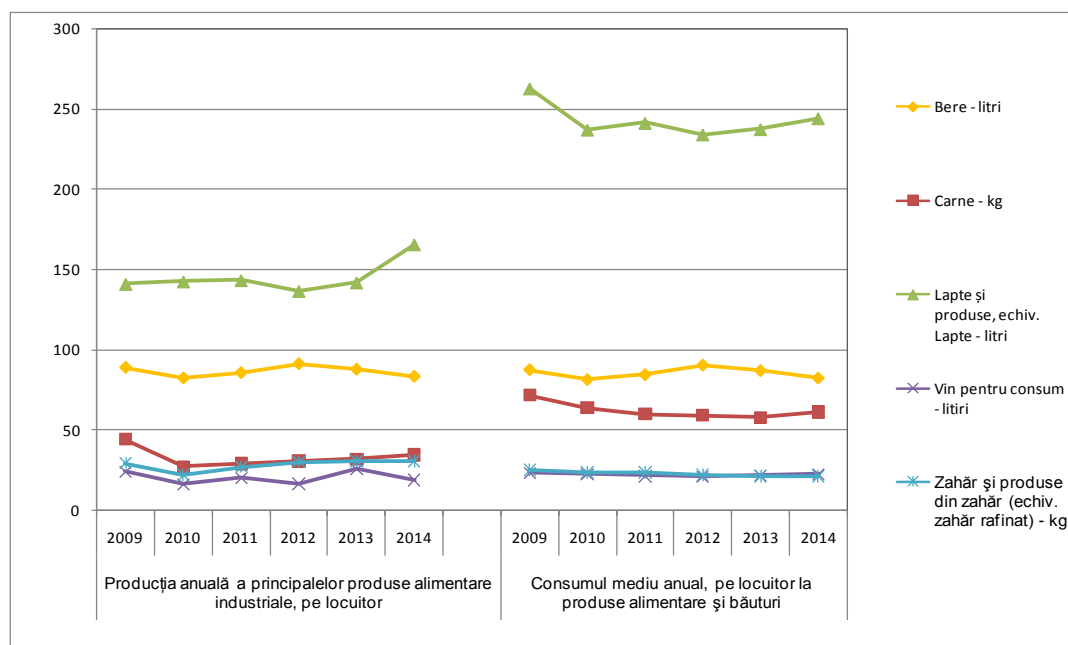
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*Abstract: Romania is an important consumer market, which underpins a scientific approach upon the recent evolution of the food products consumption. The study focuses on analyzing the variation in household food consumption in Romania, based on the most recent information provided by National Institute of Statistics, in order to determine how consumption is influenced by certain factors. The size and structure of household food consumption is the cumulative result of market purchases and the use of food from own resources. A synthetic picture of quantitative and qualitative parameters is given by dietary intake of calories and nutrients, but the amount of food consumed by a person expresses more relevant the effect of a set of factors influencing food consumption variations, e.g: size and distribution of income, size and category of household, residence environment.*

*Keywords: consumption structure, food products, factors of change, Romania.*

A major factor for the sustainability of food supply to the population and for ensuring a reasonable level of income from activities undertaken in rural areas is represented by the agri-food processed products. However, socio-demographic and economic phenomena may represent as well critical driving factors of changing consumer's preferences and opportunities for innovative adaption of agri-food industry. Preferences regarding food and drink consumption are reliant on a wide range of determinant factors, including: biological, economic (ex.: cost, income, availability), physical (ex.: access, education, skills, time), social (ex.: culture, family, meal patterns) or psychological determinants [5]. However, price remains the most important factor determining food choice. Yet, other factors than price can influence the consumption behavior of consumers, such as the changing patterns in lifestyle, as a response to long working hours shifts towards more processed, easily packed and pre-prepared foods, or higher disposable income that allows special attention on food safety, quality, organic food, non-GMO and expected health benefits [1].

Romania has an important consumption potential of almost 20 million inhabitants. The food availability for consumption, as an annual average per inhabitant, of the main food and beverages productions, had a decreasing trend for most products, particularly milk, beverages, meat and eggs and fruit, vegetables and potatoes. Compared to industrialized food productions, as indicated by Figure 1, food consumption generally experienced relatively constant developments between the years 2009-2014, with a slight downward trend, exempt for milk.



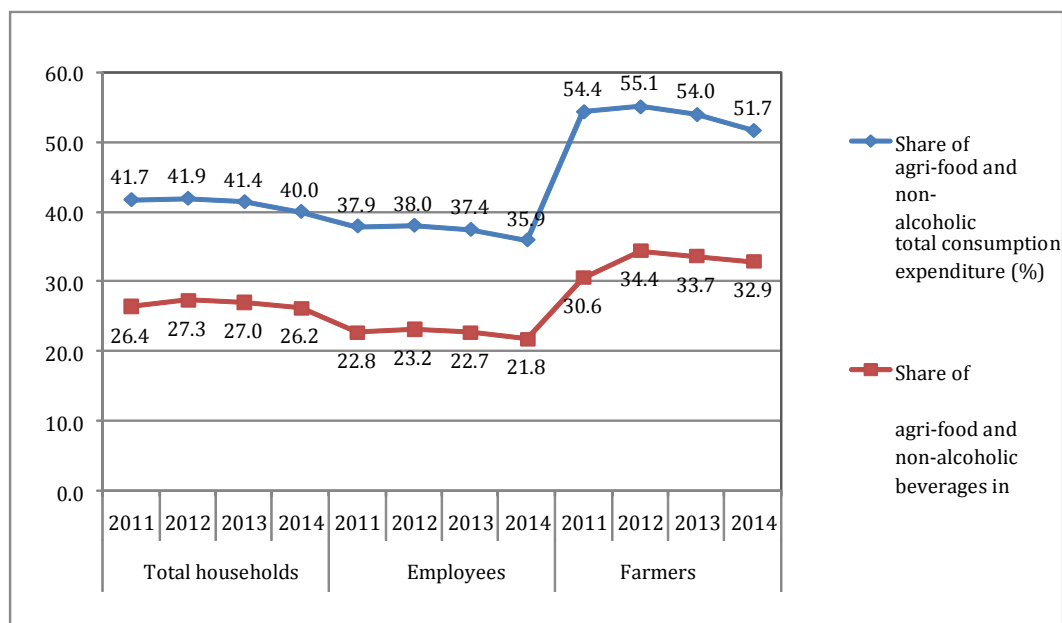
Source: processing of data from NIS [2].

Figure 1. Change in average annual per capita consumption of main agro-food products, compared to production (2009-2014)

The main productions of the food industry, by the quantities produced in 2014, were recorded for the following products: beer (16.5 mil. hl), wheat flour and rye (1.5 mil. tons equiv. wheat), meat (680 tons), fresh dairy products (4.3 mil. hl 3.5% fat eq.), 2,6 mil. hl. milk for consumption, wine for consumption (3.7 thou. hl). Although there have been annual fluctuations, average annual growth took place for most products, particularly meat (9.8%), semi-canned fish (9.5%), milk and dairy products (6%), exempt for canned fish (-19%), wine (-2.9%) and sugar & confectionery (-0.7%), that experienced decreasing trends [4].

Concerning the consumption from domestic production, in the period of time 2009-2014, only the consumption needs of beer and sugar have been assured (except 2010). The highest variations in domestic demand were for wine; the domestic demand of milk and meat exceeded the national production capacity, but the tendencies are still decreasing.

The agro-food products occupy the highest shares in the structure of the total consumption expenditure of households in Romania [2]. As Figure 2 shows, trends in these indicators have been increasing in recent years (2011-2014).

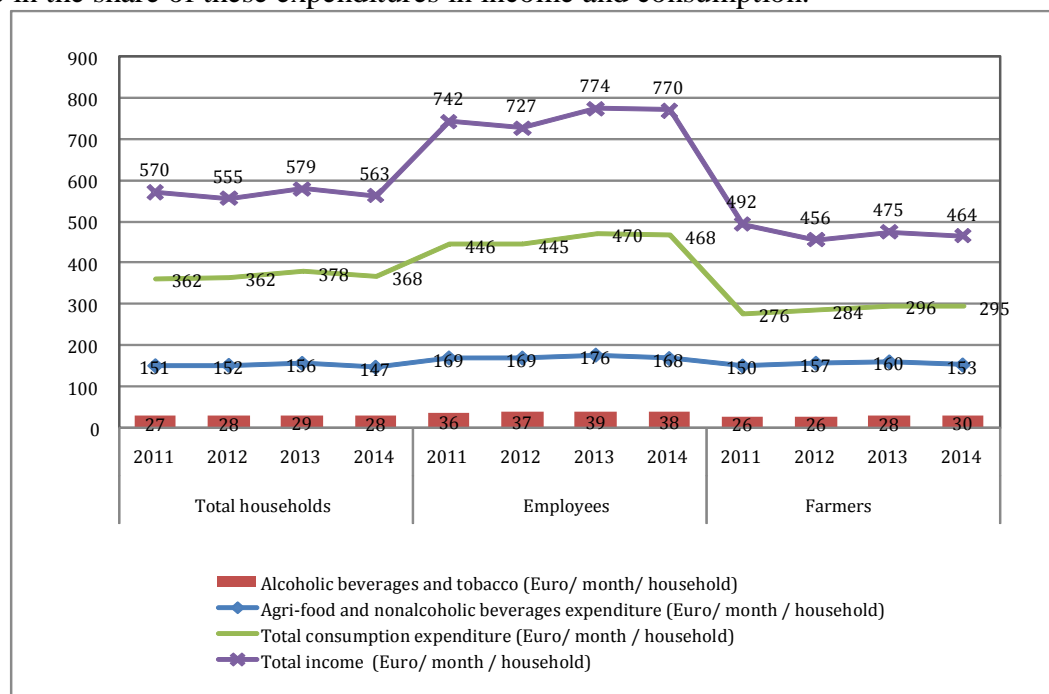


Source: processing of data from NIS [2].

Figure 2. Agri-food products by household, by share in income and consumption expenditure

Compared to other groups of occupations, it was observed that farmers were the lowest income category, where, from the total household consumption expenditure per household, the expenditures for agrifood products have a more substantial share in income.

Trends indicate a relative decrease in spending on food consumption, respectively a decrease in the share of these expenditures in income and consumption.



Source: processing of data from NIS [2].

Figure 3. Structure of agri-food consumption expenditure, by household and by occupational groups

In 2014 farmers spent about 153 Euros per month on agri-food products including non-alcoholic beverages (Figure 3), accounting for one third of revenue and more than half of total household consumption expenditure.

The analysis of the determinants of food consumption by households was supported by the *Coordinates of living standard in Romania. Population income and consumption in 2015* [3]. According to the statistics on food consumption expressed in calories and nutrients, in 2015, the average daily consumption per person was 2401 calories and 81.1 g. Both in 2015 and the previous year, the highest consumption was noted in retirement households and the lower in households of unemployed persons.

Daily average consumption in calories and proteins is more differentiated according to the size of households, the number of children under 18, and the size of the income. The largest differences were recorded in relation to the size of the households. Thus, both in 2015 and in the previous year, the highest consumption was recorded in one-person households: 3187 calories and 108.3 g in 2015 and 3222 calories and 107.8 g respectively, by 32% higher than the average total households and by 60% higher than the consumption of a person belonging to a household of 6 and more people.

There are also significant differences between households with children (under 18 years old) and households without children. In fact, both in 2015 and in the previous year, the households with the lowest average daily dietary intake per person (1967 calories and 67.3 g respectively - in 2015) is that of households where there are 4 and more children under the age of 18.

Fewer disparities are observed in the consumption of households belonging to households grouped on deciles. The difference between the maximum level (deciles D10 with 2827 calories and 96.4 g proteins) and the lowest (D1 with 2100 calories and 70.9 g proteins) was in 2015 of 727 calories and 25.5 grams per day.

Noteworthy is that in households led by females and those managed by people aged 65 and over, the energy and protein content of food consumption is higher than that of one of the other groups.

Relatively close levels are also recorded by residence and region. In rural areas in 2015, consumption was higher with 110 calories and 1.8 g than in urban areas. On the territory, the average daily consumption of calories and the highest weight was in the West Region (2558 calories and 83.1 g proteins), and the lowest in the Bucharest-Ilfov region (2215 calories and 79.9 g proteins). These latter situations are explained by the proportions of the sources of food consumption.

The structure and quality of food consumption are highlighted by the caloric and nutritional intake of different product groups. As for all households, as for all the categories of households analyzed, the predominant contribution is made by food of vegetal origin, much higher in relation to nutrition science. In both 2015 and the previous year, nearly 75% of the calories and about 50% of the quantity of proteins are provided by foods of vegetable origin.

The residence environment does not have too much influence in this respect, the share of calories of vegetable origin being 73.3% in urban and 74.7% in rural areas, while the weight of animal origin is 52.5% in urban and 47.6% in rural areas.

Analysis of the caloric intake of different groups of foods highlights the fact that on all households, cereals and grain products provide almost half of the number of calories (40.9%, up 1.6 percentage points compared to 2014). This input is great to almost all categories of households analyzed, ranging from 43.5% to farmer households and 40.1% to households of employees. Within this group of foods, on average on households, the caloric intake of bread and franchise products predominates, up from the previous year (from 25.5% in 2014 to 26.5% in 2015). At farmers' farms, alongside bread and franchise products, maize flour has an important calorie intake, representing 7.7% of the total.

On all households, meat and meat preparations had a modest weight in the number of calories contained in the diet, but slightly higher than in the previous year (from 11.3% in 2014 to 12.2% in 2015). Calories from milk, dairy products (cheese and cream) and eggs account for 11.0% of total calories in household consumption. These products have the largest contribution to farms'

households (11.3%) and the lowest in households (9.6%). The largest share, which is over 11.4%, of maize oil, sunflower, soybean was for all other analyzed households except for households of farmers, self-employed in non-agricultural activities and unemployed persons. On the other hand, vegetables and canned beans, potatoes, beans and other legumes for beans together accounted for only 7.9% of the total calories in the total households.

The calorie intake of the main foods in the two residential areas is similar to that shown for the whole households. There are some differences that are derived mainly from the specific features of the sources of coverage and the income level of the households in the two residence environments. Thus, both in 2015 and in the previous year, in urban areas is higher the caloric intake of: meat and meat products, fish and fish products, cheese and cream, fat, fruit, vegetables and canned vegetables, sugar, sweets, chocolate and other sugary products; while in the rural areas is higher the share of calories from: cereals and cereal products; milk; beans and other leguminous beans.

The amount of food consumed by a person reflects in a more relevant way the effect of the complex of factors of influence at the household level: income and household size, the number of children, the residence environment etc..

Bread and bread products are one of the basic foods for all analyzed households. For all households, in 2015, the average monthly consumption was 8.4 kg /person, meaning 100.6 kg /person per year. The lowest consumption of bread and franchise products was registered in the households of employees (8.1 kg /person). Significant differences between bread and franchise levels are found in households grouped on decile: The lowest consumption was recorded in the D10 deciles (6.8 kg / person) and the highest in the D3 deciles (8.7 kg / person), in the next deciles being slightly smaller. In this case, one of the consumption laws shows that the consumption of cereal products decreases from a certain level, being substituted by other foods with higher nutritional value.

Consumption of meat and meat products is relatively low compared to standards in developed countries. The average monthly consumption of fresh meat per person in the year 2015 was 3.4 kg /person. Together with meat preparations, it amounts to 4.5 kg / person per month, which means an average annual consumption of 53.9 kg /person. The largest differences, in terms of consumption of fresh meat and meat preparations, are found on decile, reflecting the strong dependence of meat consumption on income levels. The difference between D10 and decila D1 in 2015 was 1.5 kg / person fresh meat per month and 1.9 kg / person per month if consider as well meat preparations.

Significant differences are also found between households with a different number of people. One-person households have the richest consumption of meat (4.7 kg / person fresh meat per month and 6.3 kg / person per month fresh meat and meat preparations).

Drinking milk in 2015 was an average monthly of 5.7 l per person. The highest level was recorded in retirement households (6.3 l/person) and the lowest in households of unemployed (4.7 l /person). Between rural households (5.9 l/person) and those in urban areas (5.5 l/person) there was a monthly gap of 0.4 liters per person. The largest milk consumption is recorded in one-person households (7.5 l /person per month), explained by the fact that in most cases of single-person households predominate older people.

The consumption of cheese and cream has similar characteristics to that of milk. It is higher for retired households (1.4 kg /person) and lower for the unemployed (0.9 kg /person). The level of consumption of cheese and cream is more differentiated according to the number of persons in the household, the highest being recorded for one-person households (1.8 kg /person).

Potato is a food that is consumed in relatively small quantities in all categories of households. For all households, in 2015, the average monthly consumption per person was 3.2 kg. Self-employed workers, farmers, the unemployed and retirees easily overcome this level, with the

lowest consumption being recorded in the households of employees. The most important factors of differentiation are the number of households and the number of children under the age of 18 in the household. In a one-person household, 4.7 kg /person per month was consumed, compared to 2.8 kg /person per month in households of 6 and more people.

Consumption of vegetables and canned vegetables in the year 2015 was 7.5 kg on average monthly per person. As with potato consumption, the consumption of vegetables is the most differentiated according to the size and composition of the household. The largest consumption was registered in one-person households (11.4 kg /person) and in households without children (8.4 kg /person), and the smallest in households with 4 and more children (4.6 kg /person) and, respectively, those consisting of 6 and more people (5.4 kg /person).

Another factor of differentiation, with somewhat more modest influence, is the level of income, the difference between the average monthly consumption of fresh and canned vegetable per person from the deciles D10 (8.2 kg / person) and from the deciles D1 (5.6 kg /person) is 2.6 kg /person. The fruit level is relatively low, on total households, while average monthly consumption per person was 3.6 kg. More significant differences (2.9 kg /person) are reported between D10 (5 kg /person) and D1 (2.1 kg /person), explained by the size of household income. Significant differences are also seen among households grouped by size, with single-person households consuming 5.5 kg /person monthly, more than double the average consumption of households of 6 and more (2.4 kg / person in 2015).

## FINAL REMARKS

Food security is one of the major challenges of the future, from the perspective of growing global demand facing supply uncertainties linked to unpredictable economic and political, climatic and biological developments. As concluded in the new reformed CAP post 2013, EU has a reasonable awareness and strategic interest to maintain the production potential of its agriculture in view of short and long-term food production for human and animal needs. At the same time, consumers awareness continues to rise and relates food and health more imperatively.

The study presented an analysis of the following indicators: quantities and average annual growth of agro-food industry products; comparisons between average annual consumption per inhabitant and structure and trends of the consumption expenditure of households, by main occupation groups and their shares in income and consumption.

The analysis indicates that the amount of food consumed by a person reflects more closely the effect of the complex of factors of influence at the household level: e.g. the size of the income, the size of the household, the number of children, the residence environment. In rural areas and in regions where agricultural occupations predominate and where is located a higher share of people with lower levels of education, own resources play an important role in meeting food needs, and also to relative consumption higher food with high energy content.

Differences in the level of consumption of the main foods are determined, in order, by the size of the household, the number of children and the size of the income. The residence environment imprints a certain specificity, derived mainly from the ways to meet needs, but the quantitative differences are less evident.

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