

Changes in Food Consumption Pattern of Households in Romania in the Period 2004-2011

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Abstract. According to data from the Household Budget Survey, the average daily food consumption per person was about 2500 kcal in the last decade, with an increasing trend in the share of animal calories from 530 kcal in the early 2000 to over 600 kcal in the late years. The analysis of different caloric food groups highlights the fact that cereals and cereal products provide a significant part of population energy needs. Compared to 2004, the intake of meat and meat products increased, indicating the convergence to the model of developed countries. Average daily food consumption expressed in calories differs depending on household size, number of children and amount of revenue. Increasing household expenditure for food in 2011, accounting for 44.9% of total consumption expenditure, mark the end of a long period with gradual diminution in the share of food in household budget. The economic growth in the period 2004-2008, on the other hand, was reflected in income and consumption, leading to a relative decrease in food consumption expenditures, i.e. a diminution of the share of these expenditures, the evolution model of developed countries.

Keywords: average daily food consumption per person, share of food in total household expenditures

INTRODUCTION

Romania's food consumption pattern has been getting closer to the EU pattern, yet without getting support from the agricultural production for each of the main subsectors, mainly as regards the consumption of meat and vegetables (Alexandri, 2006). Thus, Romania's vulnerability from the food security perspective is taking shape, mainly in the context of the prolonged economic crisis of the last years (Otiman, 2011; EIU, 2012).

The comparative analysis of the final consumption expenditures per capita (Eurostat, 2011) in Romania, Poland and France (expressed in the purchasing power standard) reveals that there are great gaps per total expenditures, to the detriment of Romania, and the level of food expenditures in Romania remains alarmingly high, exceeding that of France in 2010. The situation is also confirmed by the data from the Family Budgets Survey in Romania, which estimate a share of food consumption expenditures in total consumption expenditures of households of 44.9% in 2011, up compared to 2010, thus stopping the relative decreasing trend of food consumption expenditures, which ensured the convergence with the consumption pattern of the developed countries.

The aim of the study was the identification of certain vulnerable aspects in covering the consumption needs on the population's holdings and of the relation between the household characteristics and the food consumption, as elements that can lie at the basis of a future substantiation of certain nutritional intervention programs in Romania.

MATERIALS AND METHODS

The evolution of the effective food consumption and of the household food consumption expenditures in Romania is best revealed by the data collected by National Institut of Statistics (NIS) through the Household Budget Survey. The Household Budget

Survey (HBS) is a statistical research, conducted yearly by NIS, which provide the necessary information for the evaluation of the population's incomes, expenditures and consumption in Romania. HBS is organized as a quarterly survey on a sample of 9360 dwellings, distributed into independent monthly sub-samples of 3120 dwellings each (INS, 2012). The size and structure of the household food consumption represent the cumulated result of the purchase of foodstuffs on the market and of the utilization of food products produced on the household (self-consumption). The synthetic picture of food consumption is expressed in calories.

The adopted approach for the proposed analysis considers that the food consumption on households considers that the share of food expenditures in total consumption expenditures of households depends on some household specific factors, among which the income level is an essential factor. Comparison between different categories of households were the main method used for analysis.

RESULTS AND DISCUSSIONS

According to HBS data, the daily average food consumption per capita was about 2500 kcal in the last decade, with an increasing tendency of the share of calories of animal origin from 530 kcal in the early 2000s to 620 kcal at the end of the 2000s (Figure 1). At the same time, the survey reveals the decrease of this consumption in the last two years for which data are available (2010 and 2011), most probably as an effect of the diminution of household incomes with the economic crisis setting in. In the year 2011, the highest consumption was found in the households of pensioners (2546 kcal), and the lowest in the households of unemployed (2198 kcal). Per total households, as well as by each category of households (employees, self-employed in non-agricultural activities, farmers, unemployed, pensioners), the foodstuffs of vegetable origin have a main contribution, which is much greater than the nutrition science benchmarks. Food consumption structure according to the origin of calories is similar in the rural area (75% of vegetable origin) and in the urban area (74.4%).

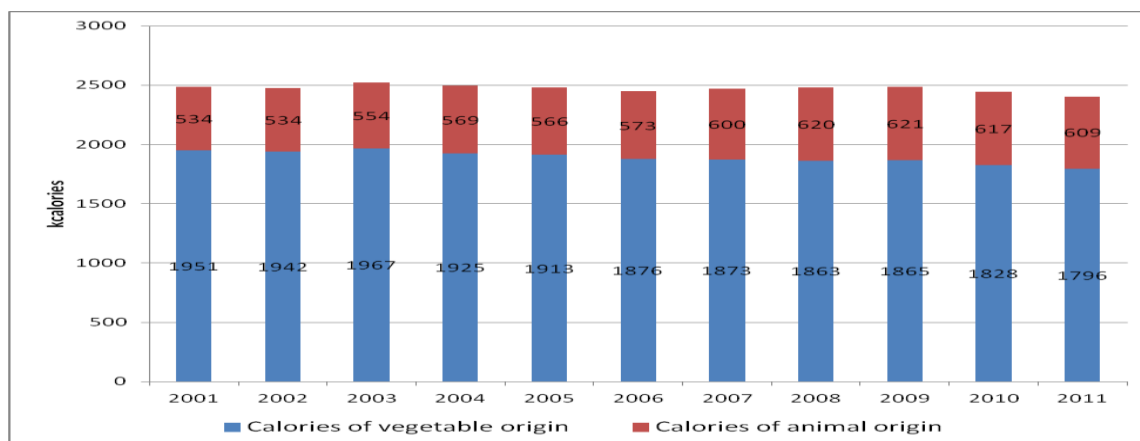


Fig. 1. Evolution of average daily food consumption per capita, expressed in calories, in Romania

While not being influenced by the residence area, the average daily food consumption expressed in calories is differentiated according to the household size, to the number of children less than 18 years old on the household and to the size of income. Tab. 1 presents the discrepancies between the food consumption per person in the households at the end of the distribution for each mentioned characteristic, revealing the nutritional vulnerability of households consisting of 6 persons and more, of those with 4 children and more, as well as of those from decile 1 (with the lowest incomes).

Tab. 1

Average daily calorie intake per person in Romania, in the year 2011, according to certain characteristics of households

	High intake (kcal)	Low intake (kcal)
According to household size	Households with 1 person	Households with 6 persons and more
	3330	1990
According to the number of children under 18 years of age	Households with no children	Households with 4 children and more
	2541	1949
According to income size	Households from decile 10	Households from decile 1
	2781	2086

Source: INS (2012)

The analysis of the caloric ratio of different groups of foodstuffs (Tab. 2) reveals that the cereals and cereal products provide a consistent part of the energy needs, both per total households (40.4 % in 2011), and by categories of households (44.5% in the households of pensioners and 38.6% in the households of employees). Compared to 2004, the contribution of meat and meat preparations increased, as well as the contribution of milk, dairy products and eggs, indicating the correction tendency of the food consumption pattern, in the sense of convergence to the pattern in the developed countries.

Tab. 2

Caloric contribution of the main categories of food products in the food consumption of households from Romania (% of total food consumption)

	2004	2008	2011
Cereals and cereal products	44.3	41.1	40.4
Meat and meat preparations	9.0	10.7	10.8
Milk, dairy products and eggs	10.3	11.1	11.1
Fats	15.6	14.8	14.9
Vegetables, potatoes and beans	8.5	7.9	8.2
Fruit (melons incl.)	2.2	2.9	3.0
Sugar, confectionery, chocolate	6.9	7.7	6.3

Source: INS (2012)

A complementary remark to those mentioned above refers to the caloric contribution of the different groups of foodstuffs by residence areas. Thus, it was noticed that in the urban area the caloric contribution is higher in the case of meat, fish, cheese, fats, fruit, vegetables and sugar, while in the rural area it is the cereals, milk, beans and other legumes that have higher contributions.

Tab. 3

Structure of consumption expenditures per total households in Romania (% of total consumption expenditures)

	2004	2005	2006	2007	2008	2009	2010	2011
Food consumption	49.6	47.2	45.4	45.0	44.3	44.2	44.1	44.9
Non-food commodities	27.6	28.8	29.7	30.3	31.5	31.0	30.7	30.1
Payment of services	22.8	24.0	24.9	24.7	24.2	24.8	25.2	25.0

Source: INS (2012)

With regard to the food consumption expenditures of Romanian households, according to HBS, in the year 2011 the food consumption expenditures accounted for 44.9% of total consumption expenditures per total households. This share increased by 0.8 percent compared to 2010, marking the end of the continuous diminution in the last decade (Tab. 3). The economic growth in the period 2004-2008 was reflected in the population's incomes and consumptions, leading to the relative diminution of the food consumption expenditures, namely the diminution of their share in total expenditures, according to the evolution pattern of the developed countries.

The analysis of the distribution of food expenditures by categories of households, according to the household head's occupational status, reveals that there is a great discrepancy as regards the share of food consumption, between the households of employees (by about 40%) and the households of farmers (by about 60%).

There are also significant differences between the households in the urban area and those from the rural area: thus, the structure of expenditures in the urban area is more balanced, with a greater share allocated to services. The differences between the food consumption share between the rural households (51.9% of total consumption expenditures) and the urban households (40.9%) are favoured by the fact that in the rural area almost half (45.4%) of food consumption expenditures are represented by the value of self-consumption, which represents only 20.0% in the urban area.

Comparing the shares of food consumption expenditures by categories of households, it can be noticed that there are great differences depending on the household size, number of children under 18 years of age, the income size and the household head's training level (Tab. 4).

Tab. 4

Share of food consumption expenditures in total consumption expenditures of households in Romania, according to household characteristics in the year 2011

	<i>Low share (%)</i>	<i>High share (%)</i>
According to household size	With 1 person	With 6 persons and over
	45.8	53.0
According to the number of children under 18 years	Without children	With 4 children and over
	44.0	63.9
According to income size	From decile 10	From decile 1
	34.9	53.5
According to household head's training level	Higher education	Primary education
	32.8	65.7

Source: INS (2012)

Similarly to the food consumption expressed in calories, the food vulnerability of households increases with the number of members in household and decreases with the increase of incomes; the apparent paradox is that it is the households that spend more for food consumption (as share in total expenditures) that have the lowest food consumption (expressed in calories). The dimension that unifies the two aspects revealed here is represented by the level of poverty of these groups of households.

The magnitude of food insecurity in Romania. The processing of primary data from the Household Budget Survey in the first and third quarters of the year 2011 reveals an extremely high level of food insecurity self-evaluated by each household in sample, by the answer to the question „Owing to the lack of financial resources, was your household unable to pay for sufficient food products to ensure an acceptable level of food?”. Thus, in the first quarter, about 40% of households considered that they were unable to pay for the necessary

foodstuffs (this share was down in the third quarter, to reach 37%), as it results from the data presented in Tab. 5.

Tab. 5

Share of food consumption expenditures in total consumption expenditures self-evaluated as food insecurity in the year 2011

	First quarter		Third quarter	
	Number of households	Share of food expenditures	Number of households	Share of food expenditures
Total households in national sample, out of which:	7843	50.3%	7726	49.5%
Households that are food insecure, out of which:	3133	52.9%	2868	51.9%
Households that are food insecure in the urban area	1462	45.8%	1332	45.8%
Households that are food insecure in the rural area	1671	59.2%	1536	57.1%

Source: the author's processing, information from the database of the Household Budget Survey

The high share of households that evaluate themselves as being vulnerable from the food security perspective imposes a more comprehensive investigation of the objective nutrition situation on these households and of the causes that generate food insecurity. The quite small differences, i.e. a few percentages, between the shares of food expenditures per total sample and for the households that are self-evaluated as vulnerable, suggest that a subjective perception may exist at household level, but the high share of food expenditures (over 50%) suggests that many households are on the edge of food insecurity. This finding implies the need to initiate certain systematic research studies meant to identify the vulnerable persons/households, which should be followed by the introduction of national programs for fighting against food insecurity. The introduction of nutritional supplementation programs must be prepared by evaluating the impact of limited interventions up to the present moment, by estimating the impact in Romania of similar interventions applied in other countries or even of certain measures that have not been previously experimented.

Analysis of food consumption only through total consumption, as recorded by the Household Budget Survey, provides an incomplete picture of the nutritional status of the population, because cannot highlight the link between diet and health of the population. A different assessment of nutritional status of the population in Romania, after another methodology, was conducted in 2010 and 2011 by the Ministry of Health (MS, 2011). According to that study, the average energy intake for men is 2815 kcal (3000 recommended to the needs of specialists) and for women of 2359 kcal (compared with requirements of 2500 kcal). The average ratio in energy recommendations, as shown in the sample studied, add some of the diet tares (high intake of fat and total protein, insufficient intake of carbohydrates and dietary fiber). The assessment highlights the subjects studied preference for certain products they consume more often, namely: meat and meat products, eggs and dairy products, bread and sugar. These data confirm the trend of increasing the share of animal calories recorded by other research.

To investigate the link between nutrition and health is necessary an improvement of research methods, starting with data collection, to allow an accurate measurement of dietary intake, which can be achieved only individually and as disaggregated as possible in terms of to the type of food consumed. Also, according to specialists (Nayga, 2008), nutritional

behavior research should be related with leisure activities of individuals, but also with the context of housing, neighborhood and community.

CONCLUSION

The qualitative changes of the food consumption pattern measured by the amount of proteins in diet, out of which proteins of animal origin, reveal that significant evolutions took place in Romania in the last two decades, as regards the protein component in diet, in the sense of increased quantities of protein and of proteins of animal origin in particular. The analysis of the caloric contribution of the different groups of foodstuffs reveals that although the cereals and the cereal products provide a consistent part of the energy needs, the contribution of meat and meat preparations increased, as well as that of milk, dairy products and eggs, indicating the correction tendency of the food consumption structure, in the sense of convergence with the consumption pattern of the developed countries. However, similarly to the developed countries, Romania will have to introduce certain national nutrition supplementation programs for the vulnerable categories of persons.

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REFERENCES

1. Alexandri, C. (ed.by) (2006). Integrarea europeană a piețelor agricole românești, Editura Terra Nostra, Iași
2. Economist Intelligence Unit (2012). Global food security index 2012. An assessment of global affordability, availability and quality, London
3. Eurostat (2011). Food: From Farm to Fork Statistics, Eurostat Pocketbooks, Luxembourg
4. INS (2012). Coordonate ale nivelului de trai în România. Veniturile și consumul populației, National Institute of Statistics, București
5. MS (2011). Evaluarea stării de nutriție și a alimentației populației, Ministry of Health, Bucuresti
6. Otiman, P.I. (ed.by) (2011). Alternativele economiei rurale a României: dezvoltarea agriculturii sau insecuritatea alimentară și deșertificare rurală severă, Editura Academiei Române, București
7. Nayga, R.M.Jr. (2008). Nutrition, obesity and health: policies and economic research challenges, in European Review of Agricultural Economics. 35(3): 281-302