



*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*

# **Scientific Journal**

**Warsaw University of Life Sciences – SGGW**

# **PROBLEMS OF WORLD AGRICULTURE**

**Volume 11 (XXVI)**

**Number 3**

**Warsaw University of Life Sciences Press**

**Warsaw 2011**

**Ewa Halicka<sup>1</sup>**

Chair of Consumption Organization and Economics  
Warsaw University of Life Sciences  
Warsaw

## **Implementation of CAP programs aimed at increasing the consumption of fruit, vegetable and milk products in Polish schools**

**Abstract.** The Common Agriculture Policy's Fruit Scheme and School Milk Program are EU-wide institutional attempts to encourage consumption of selected food products among children by increasing their availability in schools. The number of pupils participating in both schemes in Poland has reached more than 67% and 38% of the appropriate target groups. Pilot studies, carried out in 2010 and 2011, indicate what products are most preferred by Polish schoolchildren from among those made available to them through the schemes. Circa 86% of the surveyed children living in cities would like to obtain more milk products in schools, especially yogurts. In order to make both CAP schemes more nutrition-oriented the education component should be strengthened since the availability and the price are important, but not exclusive determinants of food choice.

**Key words:** Common Agricultural Policy, consumption, school, children

### **Introduction**

According to the European Strategy on Nutrition, Overweight and Obesity adopted in May 2007 '... the Common Agricultural Policy plays an important role in food production and supply. As a result by ensuring the availability of the foods that Europeans eat it can also help shape the European diet and to fight against obesity and overweight'. There are currently two important CAP tools (schemes) which, through increased accessibility and affordability of fruit and vegetable as well as milk products in school settings, may potentially improve the dietary patterns of children. Both CAP mechanisms are implemented in most of the EU states including Poland, however research focused on their impact on demand change is scarce. Independent qualitative studies as well as quantitative analyses are much needed to assess the outcomes of the undertaken efforts on national and EU levels, as well as to identify the programs' hold-up problems, strengths and weaknesses. Consumer studies, presented in this paper, although not a source of representative data, shed some light on the implementation process and add some contribution to discussion of the role of CAP measures in shaping consumer behaviour and health.

### **Statistical data on food consumption**

Several sources of data are available and widely used by researchers to analyze food consumption and therefore they should be clearly identified in order to prevent confusion

---

<sup>1</sup> DrSc, email: ewa\_halicka@sggw.pl.

and/or misleading results. For the purpose of international comparisons and detection of trends, the FAO Balance Sheet (FBS) database, published yearly since 1961, is frequently utilized. The FBS are compiled from a highly disaggregated set of supply-utilization accounts. As in all supply-based food assessment systems the FAO FBS reflect information on food availability at a country level and not the actual intake at a household or individual level and therefore represent ‘apparent’ consumption at retail level [Schmidhuber & Trail 2006]. Due to the fact that these data are derived from a commodity balance and do not consider losses that may occur after the retail sale level (notably household waste, retailing losses and pet food), they are often significantly overestimated in comparison to the actual intake. Additionally, it must be stressed that because they are obtained on a per capita basis the FAO or national FBS data do not differentiate between gender and age groups.

Another important source of information on food consumption are the standardized and nationally representative household budget surveys (HBS) which record in open questionnaires all foods and beverages available during a reference period. Usually HBS do not comprise the amounts and types of food consumed out of home, food losses and waste, food given to pets and meals offered to guests. Despite these limitations, the collected data is a valuable source of information on how socio-demographic characteristics, household composition and time (seasonality) influence the food consumption. Nationwide surveys are conducted in many EU countries, however, due to different methodologies, a great care has to be taken in preparing inter-country comparisons. The use of national HBSs for the nutrition monitoring purposes has been evaluated through the Data Food Networking (DAFNE) initiative which currently interrelates 26 European Countries [European... 2009]. Data are collected in Poland from a representative sample of 37.5 thousand households (3132 dwellings every month). The results of these studies are collected and published yearly by the Central Statistical Office [Budzety... 2010].

Population-based individual food consumption data are not collected systematically in many countries due to high costs. In Poland, the last study which included children was carried out in 2000 by the Institute of Food and Nutrition [Szponar et al 2003; European... 2009] and was based on the 24-hour recall method (size of sample n=4153 persons). Due to lack of ‘fresh’ data an analysis of the CAP impact mechanisms (implemented in Poland since 2004) on market demand levels seems to be a very challenging task and a quantitative data analysis should be based on raw (unpublished) HBS or primary data.

Based on currently available data, the consumption of milk products as well as fresh and processed fruit and vegetable (not including potatoes), which is the topic of this paper, is presented in Table 1.

Table 1. Annual consumption of selected foods in Poland according to various data sources, kg or litre

Product	Source of data and year		
	FAO FBS, 2007	National FBS, 2008	National HBS, 2009
Milk products excluding butter	198.5	182	Milk/cream 46.9* Cheese/yoghurt 16.7
Fruit**	50.0	55	45.2
Vegetable**	130.3	115	62.5

\* litres    \*\* fresh, chilled, frozen or processed (excluding juices)

Source: [Food... 2011; Budzety... 2010].

According to the FAO FBS data, the annual availability of all analyzed products in Poland is low, compared to the EU average. In the case of dairy products, only seven countries (Czech Republic, Malta, Spain, Hungary, Cyprus, Bulgaria and Slovakia) have lower levels. The EU average in 2007 was 241 kg/capita/year, while the countries with highest consumption of dairy products (over 350 kg) included Finland and Sweden. In the last decades, the supply of milk and its products in Poland (FBS-based data) ranged from 176 kg/capita/year (2005) to 202 kg/capita/year (1998). The consumption of milk products in the EU-27 and Poland in the years 2002-2007 is presented in Table 2.

Table 2. Consumption of milk products in the EU and Poland in 2002-2007, kg/capita

Country or group of countries	Year					
	2002	2003	2004	2005	2006	2007
Poland	198.1	195.2	180.1	176.1	188.8	198.5
EU-27	240.4	240.0	235.9	239.9	239.0	241.4

Source: [Food... 2011].

In the case of total consumption of fruit and vegetable, Poland is definitely below the WHO recommended level of 600g/person/day as well as below the EU average. In the years 2002-2007 annual fruit consumption varied from 47.4 kg/capita/year to 51.7 kg/capita/year, when the EU-27 average was about twice as high, oscillating around 104 kg/capita/year. It is essential to underline that FAO data is not a good indication of consumption in specific consumer groups (such as children) and therefore more detailed methodologies (not FBS) have to be used to evaluate the impact of promoting programs targeted at a specific group.

Analyses of the national Household Budget Surveys show that the total consumption of fruit and vegetable in Poland fluctuates annually due to supply and price changes and in 2009 it reached circa 108 kg/person/year. During the last 5 years the annual consumption of milk and its products has increased by circa 9% from 173 litre/capita to 188 litre/capita. Consumption levels per capita are lower in households with children and also those located in urban areas. It is also important to notice that, in Polish households, the self-supply is still an important source of food in many farm and low-income families. A 2005 study of low-income consumers showed that 51% of respondents in the Polish sample obtained vegetable (including potatoes) and 30% got fruit from self-supply, while among Belgian consumers only 30% of respondents produced their own vegetable (including potatoes) and 3% fruit [Food... 2007].

The results of small-sample, questionnaire-based studies, as further presented in this paper, are non-representative for the whole population and focus on consumer preferences and behaviour. These studies are related more to qualitative than quantitative issues. They can be treated as valuable source of information on attitudes. They indicate environmental factors that influence the decision-making process in the case of children.

## Characteristics of the Fruit and School Milk CAP programs

The EU Fruit Scheme was developed as a part of the reform of common market organization for fruit and vegetable and launched in 2009. The political agreement on the

European Commission's proposal was reached in the Agriculture Council in November 2008 and in December 2008 the Council Regulation (EC) no 13/2009 related to the 'provision of Community aid to supply fruit, vegetable and banana products to children in educational establishments' was adopted. The document implies that in order not to diminish the effectiveness of the Fruit Scheme, the Community aid should not be used to replace funding for any existing national school fruit schemes or other school distribution schemes that include fruit.

The member states participating in the scheme apply every year for Community aid, which in total cannot exceed 90 million EUR per school year. The Community financial support is allocated basing on the proportion of children of six to ten year old in the core target group. It finances the costs of supply of products as well as activities linked to logistics, distribution, equipment, communication, monitoring and evaluation of the program. Currently all EU member states except Sweden, Finland and the United Kingdom have signed up for the scheme.

The granted EU-funds must be matched (3:1) by either national or private contributions. The main beneficiaries in 2011/2012 will be Italy (18 million EUR), Germany (11 million EUR), France (10 million EUR), Poland (9 million EUR) and Romania (8 million EUR). It is estimated that in the 2009/2010 school year about 4.7 million children benefited from the scheme by receiving free portions of fruit and vegetable in their schools. This constituted circa 18% of the EU-wide target group.

It is important to stress that, according to Council Regulation (EC) no. 13/2009 the Scheme cannot cover unhealthy products that contain, for example, a high percentage of fat or added sugar. The member states select the eligible products on such criteria as seasonality, availability of produce or environmental concerns and identify them in their strategies. In Hungary, for example, only apples are subsidized. All products must meet quality and health requirements described in the EU and national regulations. In this context the Scheme can be seen as a tool to encourage, by increasing the availability of fruit and vegetable, healthier eating habits among schoolchildren and it may have a long term positive impact on their diets.

The European-wide School Milk Scheme was introduced in the eighties as a tool to create demand for the market surplus of dairy products. In the first period it was totally financed by the Community budget, however since 2000, due to financial restrictions, it has become a co-financed measure. In response to requests and suggestions of member states and the European parliament, the European Commission adopted in 2008 a new version of the EU School Milk Scheme with simple and clear implementation rules that provides a larger range of healthy dairy products to more children. According to the detailed rules for applying the Council Regulation (EC) no 1234/2007, which were laid down in the Commission Regulation (EC) no 657/2008 of July 2009, the EU subsidy is the same for full-fat, medium-fat and low-fat products. The member states can choose food they wish to distribute from a list of eligible products which includes various types of drinking milk (also with added fruit juice), fermented milk products as yoghurt, buttermilk, kefir etc. and a wide range of cheeses.

In the 2008/2009 school year the equivalence of 385.4 thousand tonne of milk was distributed in 26 participating countries (all member states except Greece). The total amount of Community support was EUR 75.09 million and Poland was allocated the biggest budget of EUR 14.06 million, followed by France with EUR 13.53 million, Sweden EUR 9.03 million, United Kingdom EUR 8.21 million and Germany EUR 7.17 million. In

the school year 2006/2007, the milk program was implemented in 22 countries and the community expenditure surpassed EUR 50 million. The initiative is supported by a communication campaign 'Milk – drink it up', which contains links to other milk promoting activities.

## **Implementation of the Fruit and School Milk Schemes in Poland**

The national institution responsible in Poland for administrating the Community Fruit School Scheme is the Agricultural Market Agency (Agencja Rynku Rolnego, ARR). After the national strategy for implementation of the Fruit Scheme 2009/2010 was prepared, the prime minister Donald Tusk signed (on August 11th, 2009) the first regulation of the Council of Ministers on introducing the Program in Poland [Rozporządzenie... 2009]. In 2010 and 2011, some changes in the program (including type of products, quality and financial aspects) took place and all legal documents related to this process were published online on the ARR's website.

The 'fixed ceiling' for the program's budget of was set at EUR 12 297 064, of which EUR 9 222 800 were the EU funds and EUR 3 074 264 were national funds. A maximum of EUR 614 853 could be allocated annually for covering the costs of program communication and promotion.

Children in voluntarily participating schools in Poland can receive (depending on the nation-wide proportion of children that sign up for the program) 20, 30 or 40 portions of fruit and vegetable per semester. The products are distributed during 10 selected weeks in every semester. The fruit and vegetable which were initially eligible under the scheme in Poland included fresh apples, pears, strawberries, carrots, sweet peppers, radishes, cucumbers and juices (fruit, vegetable and mixed). In the following years cucumbers and sweet peppers were withdrawn from the program.

In the first semester of school year 2009/2010 almost 300 thousand Polish pupils aged 6-9 years received 40 portions of free fruit and vegetable in more than 2.5 thousand schools. In the following semester, the number of children surpassed 570 thousand and the number of participating schools grew to circa 5.6 thousand. In the second semester of 2010/2011 the number of participating children surpassed 66% of the target group estimated at 1 million 167 thousand and reached more than 792 thousand pupils in 8.6 thousand schools. This led to the decision that 20 portions of fruit and vegetable would be available per child in the schools which benefited from the aid.

An anonymous survey was conducted among 118 children attending classes I-III in two primary schools in Warsaw enrolled in the Fruit Scheme in June 2010 [Tymińska 2010]. The questionnaire consisted of 11 simple questions linked to fruit and vegetable consumption, concerning its frequency, time and place. According to the analyzed data, 97% of the interviewed children liked eating fruit and 72% liked eating vegetable. Their preferred fruit were apples (48%), strawberries (20%), cherries, watermelons and bananas. The vegetable that children liked best were cucumbers (28%), tomatoes (16%) and green salad. Children did not like certain fruit and vegetable because they were 'not tasty' or 'not sweet'. Studies carried out in 2007 among 11-13 year-olds showed that 6% of the teenagers did not like eating fruit and 15% did not like vegetable [Niedziółka 2007; Tondera 2007].

A pilot study conducted in Warsaw [Tymińska 2010] also pointed to the fact that 92% of children agreed that fruit and vegetable are healthy, however only 10% knew the number

of recommended portions. About 60% of the surveyed children declared that they knew why they received fruit and vegetable in school and the most frequently quoted reason was 'to make me (or my diet) more healthy'. However, only 38% of children 'liked', 32% 'did not like' and 39% 'did not always like' getting the products from the Scheme in their school. About half of the children declared that they would like to get more fruit and vegetable, preferably apples, strawberries and citrus fruit. According to the interviewed teachers, the fact that many children did not enjoy the products was linked to the poor quality of some of the supplied fruit and vegetable. They also identified problems with managing the distribution of the products and they would also appreciate an organizational or even financial involvement of parents in the program.

Compared to the Fruit Scheme, the School Milk Scheme is much bigger tool as more types of educational establishments can benefit from it. The EU Milk program was introduced in Poland in 2004, when the country entered the European Union structures. It is important to note that prior to Poland's accession there was a long-term national program, so both schools and pupils were already used to the initiative.

According to ARR publications, the number of schools participating in the 2009/2010 scheme in Poland reached 17 thousand (14.2 thousand in 2008/2009), which constituted about 25% of the total number of eligible schools. Most of them were located in the Mazovian voivodeship (circa 2 thousand) and were primary schools. The number of schools enrolled in the Scheme had more than tripled since 2004/2005 (from 4.4 thousand to 14.2 thousand).

It is estimated that in the school year 2010/2011 more than 2 million 385 thousand (circa 38% of all children in the eligible age groups) pupils participated in the program. Based on contracts signed between applicants and educational units this number will grow to 2.8 million in the following year.

National regulations, adopted in 2009, specified that every child in a participating primary school could receive 0.25 litre of unflavored milk for free or other dairy products for a reduced price during three days every school year week (in the earlier regulations it was 5 days/week). According to ARR unflavored milk dominates among the subsidized products (circa 80%), followed by flavored milk, cheese and yogurts.

In the 2008/2009 school year, Poland was allocated EUR 14.06 million which contributed to co-financing of 77.5 thousand tonne of milk and milk products distributed in schools. Since 2005 the scheme is co-financed by the industry through the Milk Promotion Fund (circa EUR 1 million/year), currently increasing the price accessibility of dairy products in preschools and lower secondary schools (gymnasia). The scheme in primary schools has been co-financed by the national budget since 2007/2008. The level of national budget support was set in 2010/2011 at PLN 118 million (circa EUR 45 million).

Consumer surveys show that yogurts are the most preferred dairy products among schoolchildren. This observation was confirmed by a 2011 pilot study, conducted in 2 primary schools. The interviewed 12-year-olds declared that they most of all liked yogurts (92%), cheese (86%) and milk (86% flavored and 74% plain milk). Children in one of the studied schools received 2 free cartons of unflavored milk per week and could additionally buy one carton of chocolate milk for a reduced price. The other school resigned from the EU Scheme due to problems with supply management, however children still received free dairy products within a local food assistance program [Głażewski 2011]. The results of this study also showed that 30% of children drank milk because it was healthy, 32% because they liked it, 28% because it tasted good and 5% out of the habit. Less than 60% of the



children declared that they knew what was the impact of milk consumption on the human body. Most of them chose the answer 'it strengthens the bones' and 'I grow faster'. It was also evident that children were aware of different information campaigns aimed at promoting milk consumption in Poland (especially the 'Pij mleko – będziesz wielki' (Drink milk – you will be great), conducted with a participation of Polish sport and film celebrities. In 2009 alongside the both described schemes, a 'Healthy Eating Campaign' was run in several cities in Poland (as well as in Belgium, France, UK, Ireland, Estonia and Lithuania). Visits to 30 Polish schools and an interactive website focusing on a promotion of a balanced diet and healthier eating habits among schoolchildren were financed by the EU agricultural budget.

## **Summary and conclusions**

Poland is one of the biggest beneficiaries of the EU Common Agricultural Policy's programs aimed at increasing the consumption of fruit, vegetable and milk products among schoolchildren. This can be seen as a positive fact, as in the light of statistical data the per capita consumption of milk products and fruit is in Poland one of the lowest among the EU countries. The amount of Community aid allocated annually for the School Fruit Scheme surpasses EUR 9 million (about 10% of the total EU respective budget), while the School Milk Program Scheme EUR 14 million (19% of the total EU respective budget). Both schemes are administered by the Agricultural Market Agency (ARR) and both are co-financed from the national budget. In the case of the Milk Program dairy products distributed in preschools and secondary schools are additionally subsidized by industry.

Since its launch in 2009, the number of children participating in the Fruit Scheme in Poland has increased significantly and surpassed 792 thousand in more than 8.6 thousand schools. This constituted circa 67% of the targeted group of 6 to 9 year-olds. A significant increase of school participation has been also noted in the case of the Milk Scheme. According to the ARR, the number of schools in the Milk Program grew from 4.4 thousand in 2004/2005 to 17 thousand in 2009/2010. Currently circa 2.4 million Polish children consume milk products in their schools within the Scheme. However, together with the growth of size of both schemes (and their costs) individual children receive smaller amounts of free or price-reduced products per year. This leads to a conclusion that it cannot be assumed that the increase of the range of the described CAP schemes, in terms of the numbers of participating schools and pupils estimated with the use of statistical national data, will lead to a higher overall fruit, vegetable and milk consumption among Polish schoolchildren.

A pilot study conducted among children in two Warsaw schools in 2010 suggests that kids in general like eating fruit and vegetable, however, due to problems with the quality of produce, only 32% of surveyed children admit fully enjoying food available to them through the EU scheme. Monitoring is needed to verify the scale of this hold-up problem. Possible changes, including involvement of parents, should also be discussed, as school administration and teachers signaled a need for support in managing the distribution process.

In the case of the Milk Scheme a primary research, presented in this paper, shows that in general Polish children like also dairy products, however they lack a detailed nutritional information about their impact on health. In contrast to the Fruit scheme, more than 80% of

the surveyed children declared that they would like to receive dairy products in schools every day (86% in the urban schools and 78% in the rural school).

Further research, based on representative samples of children, is much needed in order to understand the differences between the behaviour and preferences of children depending on their age, gender and place of living. Such studies could also identify and verify the organizational (linked to the distribution and quality of perishable produce) hold-up problems in implementing the programs and help to suggest how they can be resolved in time.

The goals of the Fruit and Milk in School Schemes meet the priority objectives of the CAP, i.e. to reverse the decline in consumption of fruit and vegetable and to increase demand in the dairy market. They are also often described as important tools in the context of fighting the obesity epidemics. In order for the Schemes to be efficient tools in changing consumer habits, their nutrition education components need to be strengthened. The key message to children is that they need to eat a variety of products every day, however intake should not exceed individual daily requirements, related to age and physical activity level. Otherwise it will lead to overconsumption and overweight. There is no doubt that improved nutrition plays an important role on combating problems such as child obesity. The prevalence of overweight and obesity among children in Poland is lower than in many EU member states. However, it is increasing rapidly and therefore should also be a priority challenge for both public health and food policy.

## References

- Budżety gospodarstw domowych w 2009. [2010]. GUS, Warszawa. [Available at:] [http://www.stat.gov.pl/cps/rde/xbcr/gus/PUBL\\_wz\\_budżety\\_gospodarstw\\_domowych\\_w\\_2009.pdf](http://www.stat.gov.pl/cps/rde/xbcr/gus/PUBL_wz_budżety_gospodarstw_domowych_w_2009.pdf). [Accessed: May 2011].
- European Nutrition and Health report 2009. [2009]. I. Elmadfa (ed.). *Forum of Nutrition* no. 62, pp.43-59. [Available at:] [http://www.univie.ac.at/enhr/downloads/enhrii\\_book.pdf](http://www.univie.ac.at/enhr/downloads/enhrii_book.pdf) [Accessed: April 2011].
- Food Balance Sheet Database. [2011]. FAO. [Available at:] <http://faostat.fao.org/site/368/default.aspx#ancor> [Accessed: April 2011].
- Food consumption of low income groups in Poland and Belgium. [2007]. R. Januszewska, K. Rejman, J. Viaene (eds.) Warsaw University of Life Sciences Press, Warsaw.
- Głazewski M. [2011]: Funkcjonowanie programów zwiększających konsumpcję mleka w Unii Europejskiej. Master's thesis. Międzywydziałowe Studium Towaroznawstwa, SGGW, Warsaw.
- Niedziółka K. [2009]: Analiza czynników determinujących spożycie owoców i przetworów wśród dzieci w wieku 11-13 lat. Master's thesis. Wydział Nauk o Żywieniu Człowieka i Konsumpcji, SGGW, Warszawa.
- Rozporządzenie Rady Ministrów nr 1059 z dn. 11.08.2009. [2009]. Dziennik Ustaw R. P. nr 129. [Available at:] [http://www.arr.gov.pl/data/01990/rrm\\_11\\_08\\_09.pdf](http://www.arr.gov.pl/data/01990/rrm_11_08_09.pdf) [Accessed: May 2011].
- Schmidhuber J., Traill W.B. [2006]: The changing diets in the European Union in relation to healthy eating guidelines. *Public Health Nutrition* no. 9, 5, pp. 584-595.
- Szklanka mleka. [2010]. Agencja Rynku Rolnego (ARR), Warsaw [Available at:] [http://www.arr.gov.pl/data/00321/szklanka\\_mleka\\_2011.pdf](http://www.arr.gov.pl/data/00321/szklanka_mleka_2011.pdf) [Accessed: May 2011].
- Szponar L., Sekuła W., Rychlik E., Ołtarzewski M., Figurska K. [2003]: Badania indywidualnego spożycia żywności i stanu odżywienia w gospodarstwach domowych. Instytut Żywności i Żywienia, Warsaw.
- Tondera K. [2007]: Analiza spożycia warzyw przez dzieci w wieku 11-13 lat. Master's thesis. Wydział Nauk o Żywieniu Człowieka i Konsumpcji, SGGW, Warszawa.
- Tymińska M. [2010]: Analiza programu zwiększania spożycia owoców i warzyw w szkole. Master's thesis. Wydział Nauk o Żywieniu Człowieka i Konsumpcji, SGGW, Warszawa.