

Trends in food availability in Latvia – the DAFNE V project

Natālija Petruhina¹, Lidija Sparite² and Dace Šantare¹

¹Food and Veterinary Service Food Center, Riga, Latvia,

²Central Statistical Bureau of Latvia

Introduction

The European Commission has been supporting the Data Food Networking (DAFNE) initiative, which refers to a joint effort of European countries to compare the food habits of their populations and monitor overtime trends in food availability, through the creation of a non-static, regularly-updated food databank. The overall aim is the development of a nutrition monitoring tool that could assist the formulation, implementation and evaluation of nutritional policies across Europe (<http://www.nut.uoa.gr>).

Latvia became a member of the network in the context of the DAFNE V project (Grant Agreement number SPC. 2003117) and contributed to the database with the national Household Budget surveys (HBS) of 2002, 2003 and 2004. Latvia's participation was provided through the former Latvian Food Centre (LFC), recently Food Centre of Food and Veterinary Service (FCFVS) and in collaboration with the Central Statistical Bureau of Latvia (CSB) and the "Household Budget Statistics Section" of the CSB, in particular.

The main objective of the Latvian HBS is to estimate the level and structure of income and expenditure in the country in total as well as by categories of locality, socioeconomic groups, types of households etc. The HBS can also be used as a source for estimating the level of food and beverage availability among different groups of households.

In Latvia, the HBS have a long history with the first survey being undertaken in 1926/1927. In the post-war period, family budget surveys started in 1952 and were based on the "sectoral" sampling principle. A new HBS protocol was applied in

September 1995. The most recent re-design of the survey in 2001 allows compliance with Eurostat recommendations.

The detailed results of the HBS which were used in the DAFNE project were published in the statistical bulletins “Household budget in 2002“, “Household budget in 2003“, “Household budget in 2004” (Central Statistical Bureau of Latvia, 2003; 2004; 2005). In these annual reports, information on the average acquisition of 100 food items is published on a per household and per year basis.

One of the objectives achieved through participating in the DAFNE V project is the harmonization of the data to those of other countries so that inter-country comparisons are feasible. The results obtained after the application of the DAFNE procedures provide wide range, cross-sectional information on food availability among different groups of households, allowing thus monitoring trends in dietary habits and potentially assessing dietary exposure. Furthermore, as the country is now in the process of preparing a national food consumption survey, the DAFNE data represent a significant source of harmonised and comparable background information.

Material and methods

Material

Sample size

The HBS data collected in 2002, 2003 and 2004 were analysed. The survey is continuous with the survey sample being evenly distributed over the whole year (52 weeks). Every participating household is observed during one month. The net sample size for 2002 was 3949 households, for 2003 – 3631 household, for 2004 - 3913 households.

Unit of measurement

The survey unit is a *private household*, defined as a person or a group of persons tied by relationship or other personal relation, who live together in the same dwelling and share expenditures. Collective households (such as elderly homes, nursing homes for disabled children, student hostels, hotels, hospitals, sanatoriums, imprisonment

institutions etc) are not included in the survey. Households participate on a voluntary basis.

Sample frame

The survey sample covers all the territory of Latvia. The sampling frame is the dwelling database made on the basis of the 2000 Population Census and the Actual Population Register data, where information is grouped by dwelling. There are, however, cases (such as groups of several households/sample units running a farm) where the distinction of separate households using information from the population register is not possible. In this occasion, information retrieved from the statistical Farm Register is used.

Two-stage stratified random sampling was used. Households were stratified by degree of urbanization: Riga (the capital), six Latvia's largest cities, other towns and rural areas. The Population Census enumeration areas were used as primary sampling units in both urban and rural areas.

Response rate

The response rate in 2002 was 65%, in 2003 – 62% and in 2004 – 60%. The main reason of non-response was refusal to participate. More specifically, in 2002 13% of households initially included in the survey refused to participate. These percentages were 17% and 18% in 2003 and 2004, respectively.

Survey documents

Data collection is accomplished through *The Household Diary* and *The Household Questionnaire*.

Household diary: *The diary of household consumption/expenditure* is filled in by the respondents. The diary aims to register all regular household consumption/expenditures, as well as acquisition of food products received free of charge. The household members are asked to record the acquired food quantities and the prices actually paid. Data are collected through the following 2 tables:

- Expenditure and quantities of food products, tobacco and alcoholic beverages (only purchases);

- Food products that are obtained for household consumption from own production, or received free of charge (from friends, relatives, hunting, fishing, from employee, social assistance).

The recording period for foods and beverages is two weeks, whereas for non-food products and services it is four weeks. With respect to meals out of home the collected information refers only to the related expenses.

Household questionnaire: Data are collected through two face-to-face interviews; a preliminary and a final one. Information on the social and demographic characteristics of the household, the income, as well as on pensions, allowances and other available subsidies is also collected.

Nomenclature and classifications

The classification of consumption/expenditure is in line with the Eurostat recommended COICOP/HBS 1999 version. Harmonisation is achieved on the 4th level with 5 digit codes, but for calculating consumer price index weights CSB has used a detailed level including a larger number of food codes. The dataset provided to the DAFNE coordinating centre included information for 118 food items.

With respect to socio-economic characteristics, education was classified using the International Standard Classification of Education-ISCED 97 system and occupation according to International Standard Classification of Occupation-ISCO 88.

Links with other statistics

The demographic and social characteristics of the participating households were compared with data from the 2000 Population Census and the Labor Force Survey.

The results on the households' expenditures were compared to data on consumption as available through the national accounts.

Methods

The DAFNE Classifications

For all survey years, the recorded foods and beverages were classified according to the DAFNE food classification methodology that consists of 15 main and 56 sub-groups. The main groups are as follows:

Cereals and cereal products; Potatoes and other starchy roots (incl. potato products); Pulses; Vegetables (fresh and processed); Fruits (fresh and processed); Nuts; Meat, meat products and dishes; Eggs; Added lipids (fats and oils); Milk and milk products; Sugar and sugar products; Alcoholic beverages; Non-alcoholic beverages; Juices (fruit and vegetables).

Identification of the household head (main breadwinner)

In the Latvian HBS, household members are asked to define the *head of household*. Nevertheless, the reference person that should be used for describing the households' social characteristics is the *main breadwinner*, defined as the person who has the highest contribution to the common budget. It should, however be pointed out that the main breadwinner of the household and the head of the household may or may not be the same person.

In order to respect the societal norms of the country and classify households according to their characteristics in the most valid manner, the main breadwinner was used as the household's reference person, when applying the DAFNE classification scheme for socio-economic characteristics and for estimating the DAFNE results.

Locality

According to the DAFNE classification scheme for socio-demographic characteristics, locality is grouped as urban, semi-urban, and rural. After evaluating the country's structure and as an outcome of discussions during the DAFNE V plenary sessions, it was decided to group the residential areas in Latvia as urban or rural.

In compliance with the Latvian legislation, the division of the population into urban and rural is made according to the declared place of residence. Persons who live in cities and towns comprise the urban population. The Cabinet of Ministers of Latvia has confirmed the lists of cities and towns. All the rest is rural population.

Educational level

Education of the main breadwinner (household's reference person) was classified in the following three categories of educational attainment:

Illiterate/Elementary education completed; Secondary education completed; and Higher education completed.

Occupation

Occupation of the main breadwinner (household's reference person) was classified under five categories:

Manual; Non-manual; Retired; Unemployed; and Others (including students, pupils aged 15 years and above, lastingly disabled persons and housekeepers).

The classification was defined on the basis of whether the person was employed or not and, if employed, on the basis of the profession exercised. In the Latvian HBS of 2002 and 2003, only paid workers (employees) were asked about their profession. This lack of detailed information made difficult the identification of certain codes (i.e. self-employed, craftsmen) as manual or non-manual. Since, however, this information was available in the 2004 dataset, it was decided to base the 2002 and 2003 classifications on the 2004 ones as important changes in the country's social structure were not expected to have occurred during this period.

Household composition

Food availability was estimated for nine types of household composition:

Households consisting of a single adult member; two adult members; a lone parent; two adults with children; adult and elderly persons; adults with children and elderly; a single elderly member; two elderly members; and others.

Children were defined as up to 17 years of age, adults from 18-65 years of age and elderly as more than 65 years old.

Results

Table 1 presents the mean individual daily availability of the 15 main DAFNE food groups in Latvia by year of survey. According to data presented in this Table, the daily individual food availability within the households generally decreased in Latvia from 2002 to 2004. This decrease refers to items such as vegetables, fruits and pulses,

whose availability was already below the WHO recommended levels, but also to items such as added lipids (fats and oils), milk and dairy products, sugar and sugar products for which a decrease in their daily availability could be a positive development. A decrease in the daily household availability was also observed for potatoes, cereals and products (Figure 1), fish, seafood and dishes (Figure 2).

During the same period, however, the mean daily availability of meat and meat products, nuts, alcoholic and non alcoholic beverages (including fruit and vegetable juices) have increased (Figure 3). The results did not show any time trend in the daily availability of eggs.

Considerable socioeconomic disparities in the daily food availability (Figure 4) were also observed. In all survey years, availability of fruits, nuts, non alcoholic and alcoholic beverages, fruit and vegetable juices was higher among households of higher education levels, compared to households of elementary education.

Again in all survey years, households of elementary education also recorded higher daily availability of potatoes, cereals and cereal products, milk and milk products, sugar and sugar products, added lipids, fish, seafood and pulses (Figure 5).

Differences in the daily food availability by the households' residence area are presented in Figures 6 and 7. In general, the daily availability of potatoes, milk and products, cereals and products, sugar and products, added lipids and pulses was higher among rural households when compared to urban ones.

On the contrary, urban households recorded higher daily household availability of non alcoholic beverages, fruits, alcoholic beverages, fruit and vegetable juices and nuts.

Discussion

The data used in the present analysis were collected through the national HBS and cover all food items available to the household members for consumption during a specified period of time. It is generally acknowledged that dietary intake cannot be

estimated without error and each method of dietary assessment has its strengths and weaknesses. The knowledge of the method's limitations and of the nature and the magnitude of the errors will lead to a sound interpretation of results.

Household budget surveys provide regularly updated dietary data that can be linked to socio-demographic indicators and are undertaken among nationally representative population samples. Since, however, HBS are not primarily designed to collect nutritional information, the food data have limitations which need to be taken into consideration. Thus no records are collected on the type and quantity of food items and beverages consumed outside the home. Furthermore, information on food losses and waste, food given to pets, meals offered to guests, use of vitamin and mineral supplements and the presence of pregnant or lactating women in the household is not consistently recorded. Lastly, the HBS data are collected at household level and estimation of the individuals' intake can be made either through a simple division by the number of the household members (as it was done in the estimation of the presented results) or through the application of statistical modelling.

Bearing the above limitations in mind, in Latvia and during the period of 2002-2004 a decrease in the daily household availability of potatoes, cereals, vegetables and fruits was observed and is expected to be associated with a decrease in the intake of fiber, vitamins and bioactive phytochemicals. Moreover, the increasing household availability of alcoholic beverages and meat can lead to increasing intake of ethanol and saturated fatty acids, respectively. The decreasing household availability of added lipids, sugar and sugar products, however, reflects positive changes.

The trends in the daily food availability by socio-economic characteristics point towards variable changes in the populations' eating habits. Generally, people of higher socioeconomic status (as indicated by their educational attainment) consume more alcoholic and non alcoholic beverages, fruit and vegetable juices and fewer fiber-rich products, such as cereals and pulses. Nevertheless, they also tend to consume more fruits and less sugar and sugar products, when compared to households of lower education.

It should however be borne in mind that there is an association between the household's locality and the educational level of the household head. The number of people with college/university education is higher in urban than in rural areas, therefore the availability of food products in rural areas is proximal to the food availability of households whose head is of elementary education.

Similarly to other national datasets, the consumption of alcoholic beverages is underestimated in the Latvian HBS data. Experience from similar surveys provides evidence that respondents are not always ready to give sufficiently detailed information on specific questions. These include questions about expenditure on spirits, tobacco or sweets.

The DAFNE results demonstrate the necessity for a policy promoting prudent dietary choices to establish a healthy lifestyle in the population. In addition, collection of data on the population's anthropometric characteristics as well as on eating out (meals taken out of the household premises) will add in monitoring the health of the population. Further analyses and inclusion of additional surveys are required to better understand changes in food habits together with their time evolution.

References

1. Central Statistical Bureau of Latvia: Household budget in 2002, Riga, 2003, pages 100.
2. Central Statistical Bureau of Latvia: Household budget in 2003, Riga, 2004, pages 108.
3. Central Statistical Bureau of Latvia: Household budget in 2004, Riga 2005, pages 107.

Table 1. Overall mean availability by survey year (quantity/person/day)

Food Groups	Mean availability		
	2002	2003	2004
Eggs (pieces)	0.57	0.54	0.55
Potatoes (g)	328	289	274
Pulses (g)	5.13	4.69	4.39
Nuts (g)	1.80	2.07	2.10
Cereals (g)	283	274	263
Milk products (g)	304	306	293
Meat, meat products and dishes (g)	162	172	185
Vegetables (g/day/person)	236	227	216
Fish, seafood and dishes (g)	41	40	38
Fruits (g)	130	123	120
Lipids, added (g)	47	45	43
Beverages, alcoholic (ml)	43	49	51
Beverages, non alcoholic (ml)	350	373	394
Sugar and sugar products (g)	83	77	72
Fruit and vegetable juices (ml)	20	21	25

Figure 1. Mean availability of potatoes, cereals, vegetables, fruits, pulses by survey year (g/person/day)

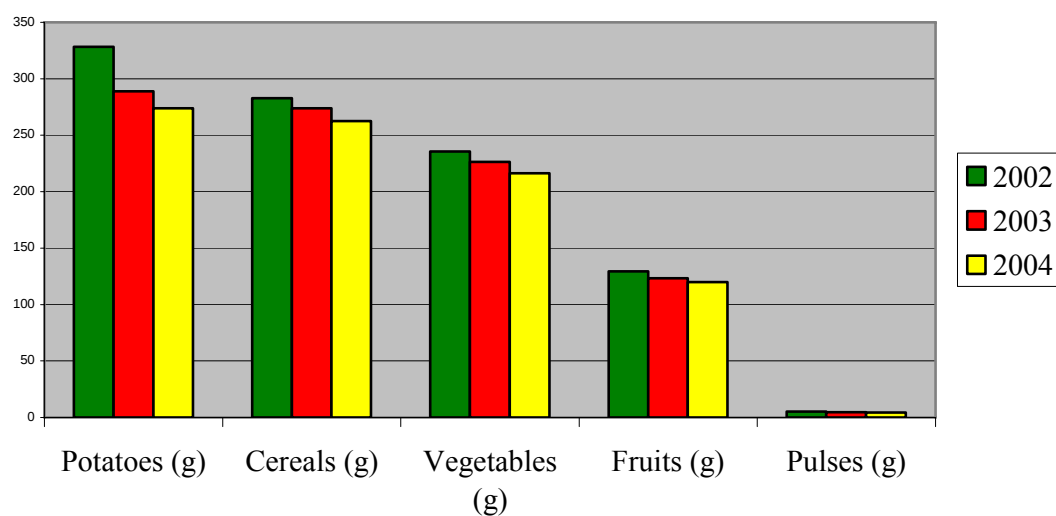


Figure 2. Mean availability of milk and dairy products, sugar and sugar products, added lipids, fish, seafood and dishes (quantity/person/day)

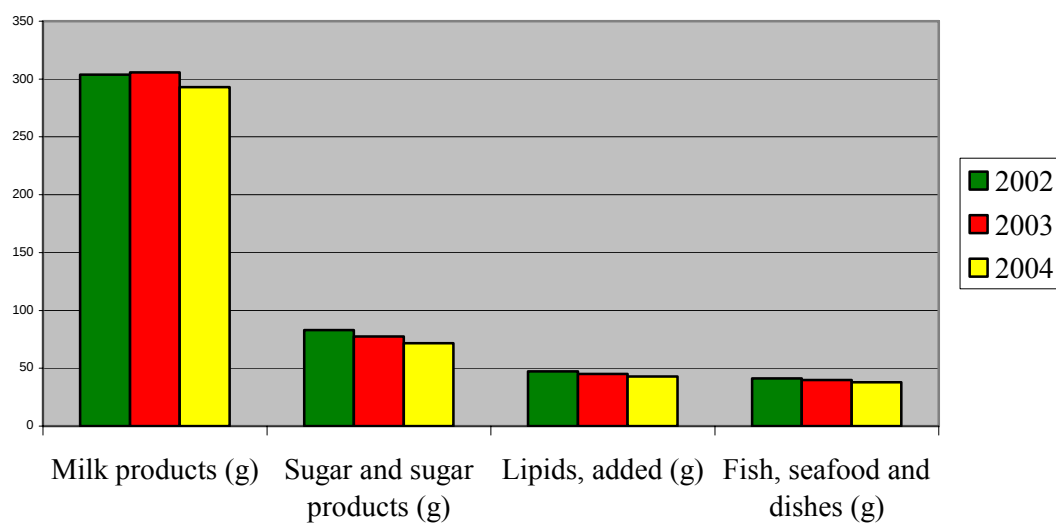


Figure 3. Mean availability of meat and meat products, non alcoholic beverages, alcoholic beverages fruit and vegetable juices and nuts (quantity/person/day)

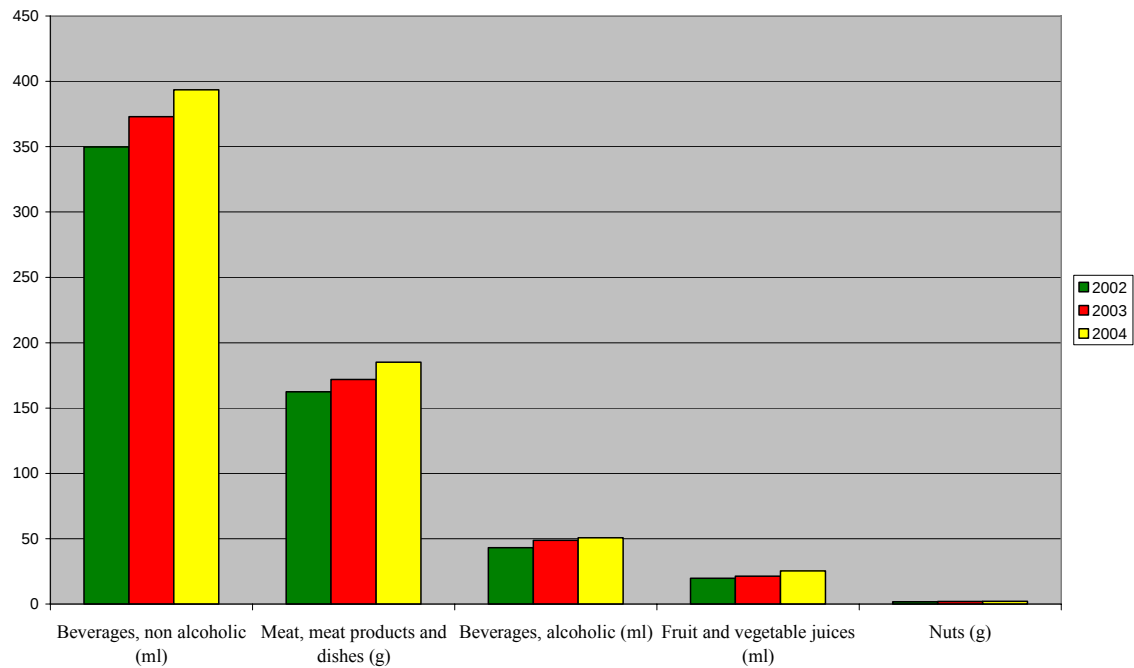


Figure 4. Mean availability of non alcoholic beverages, alcoholic beverages, fruits, fruit and vegetable juices and nuts by educational level of the household head in 2004 (quantity/person/day)

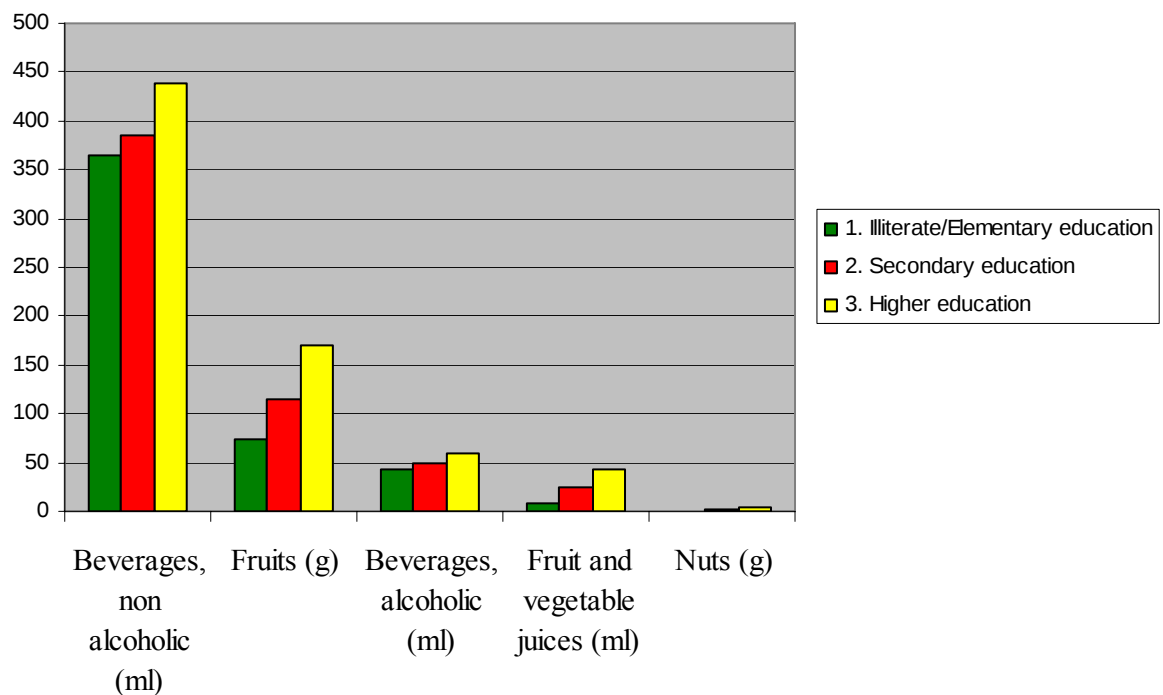


Figure 5. Mean availability of non alcoholic beverages, alcoholic beverages, fruits, fruit and vegetable juices and nuts, in Latvia by educational level of the household head in 2004 (quantity/person/day)

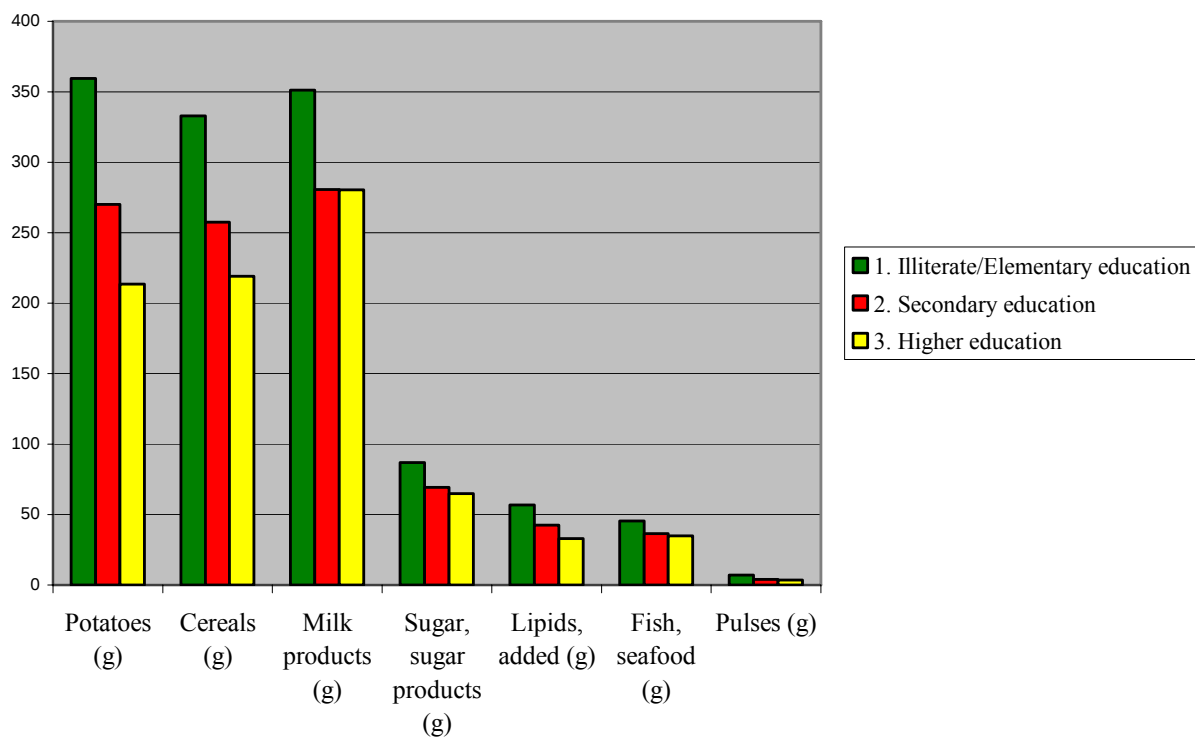


Figure 6. Mean availability of potatoes, milk products, cereals, sugar products, added lipids, pulses by locality of the dwelling in 2004 (quantity/person/day)

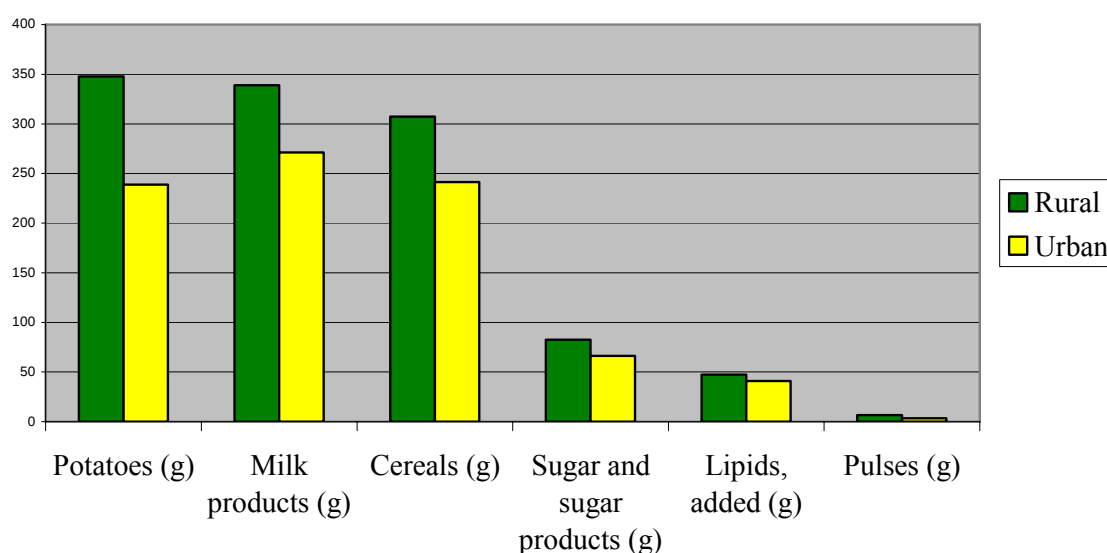
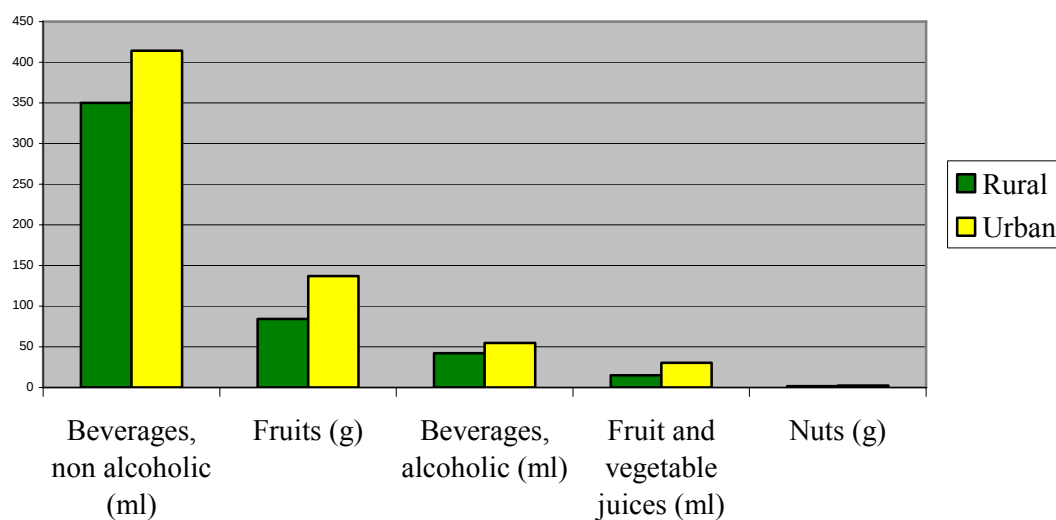


Figure 7. Mean availability of non alcoholic beverages, fruits, alcoholic beverages, fruit and vegetable juices and nuts by locality of the dwelling in 2004 (quantity/person/day)



Acknowledgement

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Notification

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