Saving money with sustainable eating habits

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Abstract

There is a need to inform decision making on health and food consumption policies with an overview of the possible implications of different food habits, including the economic implications for lower income groups. This paper shows that it is possible to save money by eating for a better environment and better overall health. The results indicate a reduction of expenditure with EUR 200 - 560 per person and year, 10 - 20 per cent. Even a poor retired person or a student can cut their food costs. The First step food for a sustainable development (FSF) means in short increasing the consumption of fruits and vegetables, grains and potatoes; reducing consumption of meat and meat products, as wells as a halving of energy-dense and micronutrient-poor foods and an unchanged consumption of fish, eggs and dairy products.

The calculations include both average consumers and various types of consumers with different eating habits and food budgets.

The estimated food costs are calculated by comparing three different sets of data for the year of 2006 as today's consumption: Direct consumption data; Food Sales; and Household Expenditure. All of them are compiled by Statistics Sweden.

The main savings can be made on reducing the amount of energy-dense and micronutrient-poor food; 35 - 40 per cent of the average consumers' food costs are spent on this kind of food. This benefits less privileged socioeconomic groups with a higher prevalence of overweight and obesity.

Introduction

There is a need to inform decision making on health and food consumption policies with an overview of the possible implications of different food habits, including the economic implications for lower income groups.

Good eating habits, especially when combined with physical activity, can prevent a great number of health problems, such as cardiovascular diseases, type-2 diabetes, strokes, illnesses of the organs of movement, some forms of cancer and even mental ill health (1,2). Seen over the long term, the number of overweight and obese adults in Sweden has increased markedly since 1980. The National Public Health Survey of 2008 shows that 42 percent of men and 28 percent of women are overweight and that 12 percent and 11 percent respectively are obese (3). Being overweight is much more common among socio-economically weaker groups (4,5). Circa 40 percent of food expenditure these days is on so-called 'junk food', i.e. food which is rich in energy but poor in nutrition and which is not needed from a nutritional standpoint (6). An estimation of the cost shows that illnesses related to the metabolic syndrome take 15-20 percent of healthcare costs (7). All of the above shows that there is a great need to change eating habits.

Food consumption also needs to be changed because the food supply chain has a major effect upon the environment. The food supply chain is responsible for approximately 20 percent of total energy consumption (8,9). The total emission of greenhouse gases generated by each person in Sweden within the country's borders in 2003 was 7.8 tonnes CO₂ equivalent (9). About 2 tonnes, or 25 percent, comes from food consumption (9). Other environmental factors which are affected by food choices are acidification and over-fertilisation, use of chemical pesticides/herbicides and loss of biodiversity (10,11).

In Sweden, the question of diet for both improved health and a better environment has been receiving attention since the mid 1990s. The scientific community and various authorities have produced a number of reports on sustainable food habits (8,10,12,13). Among these is First Step Food, a concrete guideline for more sustainable food consumption (10). The guideline in brief means more grains, root and other vegetables, fruit, and berries. The amount of animal protein such as meat and meat products is reduced and is replaced by vegetable protein. Consumption of fish, eggs, milk and cheese is as before. An important part of First Step Food is that the amount of food stuffs with high content of energy and low content of nutrient like ice cream, snacks, cream, cookies, wine, candy etc is reduced by a half (10). First Step Food is also a core part of the study materials for the Swedish *Ät S.M.A.R.T* ('Eat Smart') programme which has been widely distributed around the country.

While the program was introduced a question arose regarding how a change to sustainable food habits would affect consumers financially, especially socio-economically weaker groups. Their food budget is a relatively large part of their total household budget compared to high-income groups (15). Would such a change be possible even for these groups? A study was therefore carried out by FHI (the Swedish National Institute for Public Health) in collaboration with other official bodies and research scientists. It was presented in 2005 (16). A repeat of the study was commissioned by the government in 2009 (17).

Aims

The aims were to

- report upon how food costs would change if a) an average consumer and b) a number of varying kinds of consumer changed their food habits from their present ones (using their 2006 consumption) to more sustainable habits using First Step Food, i.e. a diet which provides both better health and a better environment.
- come to conclusions upon how a change of food habits would affect socio-economically weaker groups.

Approach

The challenge involved in this kind of study is to find relevant data about food consumption and food prices. Since data on food consumption may contain a good many uncertainties, data from three different kinds of follow-up reports regarding food consumption was used. The following kinds of data were used in the analyses.

Direct consumption is the total supply of food from food producers to private households, food preparation centres and restaurants as well as the food consumed by the producers themselves. No food losses are taken into consideration. i.e. the difference, for example, between what is prepared and what is finally eaten (18). The direct consumption data concerns the average consumption in Sweden and not the consumption of an average consumer, i.e. all types of consumption for instance gruel for infants is included in the average consumption data. Direct consumption is shown in millions of kilogrammes (kg) and as kg per person per year. Jordbruksverket (the Swedish Board of Agriculture) also provide calculations for energy and nutrition in food consumption.

Food sales statistics are produced annually by SCB (Statistics Sweden)¹. The aim of the statistics is to show the commercial sales of food and drink, including alcohol. The SCB statistics show the monetary value for various kinds of food and drink sold to households. Sales are shown in SEK (Swedish Kronor) millions. They cover food retailers and petrol stations which sell food. (19).

¹ Statistics classified in accordance with COICOP (Classification of Individual Consumption by Purpose), an international classification of private household consumption according to SNA 1993 (A System of National Accounts). (*Livsmedelsförsäljningsstatistik 2006 p. 50*)

Household expenditure HUT (= Hushållens utgifter)². The aim of HUT is to provide information about household expenditure over a whole year. SCB apply a selective surveying method and collect data continually from 1 January to 31 December every year.. Statistics are provided for single men, with or without children, single women, with or without children, and cohabiting couples, with or without children (20).

Calculations

The previous two sets of statistics are presented in SEK, whereas direct consumption data is presented in kg. Jordbruksverket were therefore commissioned by FHI to carry out cost calculations for food consumption for 2006 (21). The same energy level for food consumption before and after a change has been used in all calculations. A computerised calculation program was used to perform the calculations.

Results

Calculations based on direct consumption data

Calculations show that food costs for the average consumption per year are SEK 25 471 and that a change from present consumption to First Step Food reduces costs by SEK 5 600 or 22 percent. The greatest savings are achieved by the reduction in energy-dense and micronutrient-poor food meat and meat products. The costs for fruit, berries, root and other vegetables, potatoes and grains increases.

Food group	Food cost 2006, SEK/person/year	Food cost according to FSF ¹ 2006, SEK/person/year	Change, percent
Grain products	1 611	1 730	7 %
Potatoes and potato products	495	642	30 %
Fruits and berries	1 908	2 819	48 %
Vegetables and root vegetables	1 443	2 160	50 %
Fish and fish products	1 370	1 161	-15 %
Meat and meat products	5 335	3 782	-29 %
Milk, milk products and eggs	2 885	2 515	-13 %
Fats	478	509	6 %
Salt	13	9	-31 %
Non-core foods	9 933	4 539	-54 %
Total	25 471	19 866	-22 %

Table 1. Average food costs compared to costs for First Step Food in SEK per person per year. Calculated from direct consumption data 2006

1. FSF = First Step Food

Calculations from food sales data

Cost calculations based upon food sales statistics for 2006 show that the annual cost for the average consumption is SEK 20 340. Food costs fall by circa SEK 3 800 or circa 19 percent per year after a change from present day consumption to First Step Food consumption.

² Household expenditure is reported as groups of goods and services classified in accordance with COICOP (Classification of Individual Consumption by Purpose) an international classification of private household consumption according to SNA 1993 (A System of National Accounts (See: www.scb.se).

The greatest savings, almost SEK 4 000, are due to the reduction in energy-dense and micronutrient-poor food. Costs for meat and meat products also go down. Costs for root and other vegetables, potatoes, fruit and berries increase most.

Calculations from household expenditure data (HUT)

Calculations based upon HUT were carried out for single women and single men. Cost calculations for single women show that food costs for the average woman are SEK 23 340 per year which would fall by circa SEK 2 700 or 12 percent per year when she goes over to First Step Food consumption. The equivalent calculations for men gave food costs of SEK 20 270 per year with a cost reduction of SEK 2 000 or 10 percent per year.

Change in food costs when various consumer types make the change

Figure 1 shows example calculations of how costs for food (including alcohol) for different consumer types change when they switch to more sustainable food habits. Savings are between SEK 1 532 and 9 330 per year depending on consumption habits.

Figure 1.The staples show food costs (Swedish kronor) for various consumer types before and after a change to First Step Food, 2006. Consumers with a low food budget are shown on the left hand side of the x axis.



Food costs 2006, SEK Food costs First Step Food 2006, SEK

People with large food budgets and who consume alcohol make the greatest savings when making the change, 25-30 percent. People with very small food budgets, e.g. students or pensioners who do not drink alcohol can save approximately 8 percent by making the change.

Discussion

The most important aim of assessing consequences has been primarily to come to conclusions as to whether costs for consumers increase or decrease if they change to more sustainable food habits. A reduction of food costs might help make consumers more motivated to make a change. It would also be easier to make political decisions aimed at stimulating sustainable food habits, especially with regard to socio-economically weaker groups. In the long term, better food habits would also lead to reduced healthcare costs for diet related diseases. As was seen in the section headed Results, all three calculations showed savings for the various consumer types.

It should be remembered that the reliability of the statistical data varies. It should also be noted that the direct consumption data and the food sales data reflect the average consumption and not the consumption of an average consumer. Direct consumption data and food sales statistics contain both minor overestimations and minor underestimation, which cancel each other out to some extent. The results based on HUT contradict common knowledge since men report that they eat less and spend less on food than women do (3,4, 22,23,24). One explanation might be that HUT is based upon those surveyed keeping spending journals and reporting their own data. In this kind of survey, there is a risk of underestimation. Spending on alcohol is especially often underestimated. It is suggested here that, using HUT data, food cost savings for men have been underestimated and should be *at least* 10 percent. The upper savings limit for average consumers is judged to be around 20 percent according to the results obtained using direct consumption data and food sales statistics.

The reliability of the calculations is dependent upon whether, for example, types of food and drink are classified in the same way in the various sets of data and upon whether the calculations are carried out in the same manner. There are certain such sources of error which, however, do not have any major affect upon the end results as they relate to food and drink types which make up a relatively small part of the total budget.

The results obtained in 2005 correspond well with the results presented in 2009. There is a minor increase, however, in what is to be gained from a change of eating habits (16,17).

Conclusion

The average consumer can reduce food costs by EUR 200-560 per year, or circa 10 - 20 percent when they change to more sustainable eating habits.

Example calculations for various kinds of consumer show that food costs are reduced by EUR 150-900 per year. Even a member of a socio-economically weaker group, such as a student or pensioner, with a very small food budget can reduce his/her food costs by approximately 8 percent by making the change.

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* Titles in single quotes are translations of the Swedish title but this does not mean it is available in English.