6 a day - Denmark response to “Towards a possible European school fruit scheme – Consultation document for impact assessment”

February 2008

Introduction
6 a day is a public-private partnership with representatives from the fruit and vegetable industry, non-governmental health organizations and government agencies.

The 6 a day campaign's overall aim is to increase consumption of fruits and vegetables in the Danish population, ideally 6 a day, corresponding to 600 grams fruit and vegetables a day.

6 a day welcome the Commission's proposal for an EU School Fruit Scheme. The School Fruit Scheme is a welcome addition to the EU's strategy for improving the diets of children and tackling the high rates of obesity, cardio-vascular disease and cancer. The scheme can also play a substantial role in bringing EU agriculture policy closer to its citizens and reducing the environmental burden of current consumption patterns.

Background
Fruit and vegetable Intake

Despite national recommendations to eat at least 600 g/day, the Danish population is not reaching this goal. Only 10% of 11-15 year old children are consuming 600 grams fruit and vegetables per day.\(^1\) This pattern also exists in Europe, the majority EU member states are not reaching recommended levels of intake, and differences in consumption contribute to inequalities in health. Similar patterns are seen in children. In a recent survey of fruit and vegetable intake among European schoolchildren in 9 countries, none of the countries met national or international guidelines for fruit and vegetable intake (Pro-children).\(^2\) Food supply statistics suggest that fruit and vegetable consumption is at best stagnating and probably declining.

---


School schemes

Schools appear to be an ideal environment to focus interventions designed to increase fruit and vegetable intake, tackle overweight and prevent diseases. Although school systems and food cultures vary between countries, schools can provide a common platform for combining healthy nutrition education and increased intake – i.e. learning about healthy foods in classroom and eating, tasting and experiencing healthy foods provided at schools. Schools can reach almost all children and adolescents during their first two decades of life, and are a critical part of the social environment that shape young peoples behaviours. It has also been suggested, that interventions targeting healthy nutrition need to occur early in childhood or adolescence in order to prevent or reverse the adverse health effects of overweight and poor eating habits. A number of studies have shown that healthy diets in children and adolescents have been found to lead to increased fruit and vegetable intake in adulthood. 3, 4, 5

A review of school fruit and vegetable programmes worldwide published by the London School of Hygiene and Tropical Medicine in December 2007 suggests that school-based schemes are effective at increasing both intake of, and positive knowledge and attitudes to fruit and vegetable consumption. Of the 35 studies included, 65% of studies in both younger and older age groups showed statistically significant increases in fruit and vegetable intake at follow, with none decreasing intake. 25 studies had follow up periods greater than 1 year and this review provides evidence that both large (national) and smaller (local) scale fruit and vegetable schemes can have long term impacts on consumption. One study showed that free school fruit and vegetable schemes can also help to reduce inequalities in diet in different social groups. Effective school programmes have used a range of supply and educational approaches, and been organised in ways which vary nationally depending on differences in the food supply chain and education system. 6

Chronic non-communicable diseases

Burden

Non-communicable diseases (NCD) are currently one of the greatest threats to public health in Denmark and the European Union. Alongside with cancer, CVD is the main causes of morbidity in Europe, accounting for 18% and 15% Disability Adjusted Life Years (DALY’s), respectively. 7

---

Furthermore, CVD alone accounts for 42% of all deaths in the European Union causing over 2 million deaths every year, and it is estimated that cancer caused over 1 million deaths in the EU25 in 2006.\(^9\)\(^10\)

While it is not possible to generalize the disease pattern of cancer in the EU, as rates for incidences and mortality vary between countries, the burden of CVD is unequally distributed among the EU Member States. Death rates from coronary heart disease (CHD) and stroke are higher in Central and Eastern Europe than in Northern, Southern and Western Europe. For example: in Bulgaria CVD causes 62% of all deaths in men whereas in France the figure is 26%; 71% of female deaths in Bulgaria are from CVD whereas in France, only 31% of female deaths are from CVD.\(^11\)

CVD and especially cancer is increasingly being linked to overweight and obesity. This is particularly problematic, as obesity is now reaching epidemic levels in many parts of the world.\(^12\)\(^13\) In the EU (25) alone, more than 50% of the adult population is overweight and obese.\(^13\) The number of children and adolescents who are overweight and obese is also increasing. It is estimated that in the EU (25) approximately 22 million children are overweight, while 5.1 million of these children are obese. Conservative estimates suggest that the number of obese children will increase by 0.3 million per year in the 25 Member States.\(^14\)

As with most Chronic Non-Communicable Diseases, obesity is not equally distributed in society, but tends to cluster in lower socio-economic groups within Member States, and Member States with higher levels of social inequality are likely to have the highest prevalence of obesity, especially among adolescents and children.\(^15\)\(^16\)

Obesity is also a major risk factor in developing type 2-diabetes, and it is estimated that the risk is increased 20 times with a BMI larger than 35 kg/m\(^2\).\(^17\) Recently there has additional been an increased prevalence of type 2 diabetes among children and adolescents, although the disease historically have been associated with adults and aging. It is estimated that nearly 27,000 of the obese children in the EU (25) are suffering from type 2 diabetes.\(^18\)

---


\(^{13}\) Lobstein T, Millstone E. Context for the PorGrow study: Europe's obesity crisis. Obes Rev 2007 May;8 Suppl 2:7-16.


\(^{16}\) WHO 2007, The challenge of obesity in the WHO European Region and the strategies for response. WHO, Copenhagen

\(^{17}\) WHO 2007, ibid.

NCDs is also a burden on the EU’s economy, as obesity now is responsible for up to 6% of total health sector bills in EU member states, while it is estimated that CVD cost the EU economy over €192 billion/year. In comparison, the 2008 annual budget of the European Union is €129.1 billion. In addition, the cost of ill-health due to obesity and related diseases is high – pharmacological treatment can cost up to €500 per person per year and does not cure the problem (only prevents the problem getting worse). Social costs due to lost productivity are even higher than this, and together with health costs, may account for some €130 billion annually for EU member states (over 1% of GDP).

Fruit and vegetable consumption and Chronic Non-Communicable Diseases

The World Health Report 2002 estimates that around 4% of all disease burden in developed countries is caused by low fruit and vegetable consumption and that about 19% of gastrointestinal cancer, just under 30% of coronary heart disease and almost 20% of stroke in developed countries is due to fruit and vegetable consumption levels below 600g per day.

It is estimated that the number of lives potentially saved annually in terms of preventable ischemic heart disease, ischemic stroke and four types of cancer (lung bronchus/trachea, stomach, oesophagus, and colon/rectum) if fruit and vegetable intake increased to 600 g per day reached 892,000 and 423,000 in the EU-15 and EU-10.

A 2006 report from the Danish Health Agency estimated the cost of low fruit and vegetable intake in Denmark to be €53 million.

Questions

(1) Which is the option preferred?

The consultation document presents four options identified by the Inter-Service Group (ISG) for implementing an EU School Fruit Scheme. Our analysis of the options (see attached matrix) shows that option 4 best meets the need of increasing fruit and vegetable consumption in children and adolescents. However, to ensure that School Fruit Schemes are effective "best practice" based on several Member States’ experiences, ideally option 4 should be supplemented with option 2.

6 a day supports option 4 because:

21 Lobstein, T., Child obesity in Europe – time for action, Presentation European Parliament Briefing, Brussels 17 April 2007
it is the only option that would be effective in increasing availability and accessibility to fruits and vegetables in school environments, which is crucial in improving children's diets throughout the EU;

- faced with the current public health threat of obesity and associated chronic diseases, substantial investment is required and proportionate to counteract this trend;
- would encourage relatively poorer Member States to implement schemes that improve the quality of children's diets by providing a simple financing framework and incentives;
- provide incentives to establish new innovative food chains and source high quality, nutritious and seasonal products.

Analysis of options

Option 1: Status Quo

Europe is faced with an obesity epidemic, a crushing burden of cancer and cardiovascular diseases, and, indeed, of non-communicable diseases. A status quo option would do nothing to reduce this severe public health burden. Some Member States currently are operating school fruit and vegetable schemes. However existing Member State schemes are vulnerable to changing socio-political environments and short-term financing structures. A status quo option would not provide a strategic and financial framework to ensure expansion and improvement of existing schemes or encourage new schemes in Member States where schemes have not been implemented. This effectively will increases social and health inequalities between Member States.

Option 2: Networking

Networking is insufficient as a stand alone option, but should be ideally combined with option 4. More targeted dissemination of “best practice” specifically on School Fruit Schemes would be important but would only lead to effective, sustainable school fruit schemes if there were additional funds to support their implementation. An EU School Fruit Network in support of a measure to increase availability of fruit and vegetables in school (option 4), would guarantee success.

Option 3: Supporting Initiatives

The reform of the CMO for the fruit and vegetable sector included actions to target promotion funds for children and adolescents. Although targeting promotion funds to increase fruit and vegetable consumption in children in schools is a welcome addition to the CMO, rules, restrictions and budgetary constraints under promotion programmes would not provide adequate incentive to expand existing programmes and implement new programs. Experiences from School Fruit Schemes i.e. Ireland, Holland and Denmark that incorporate promotion funds, show that the complexity of promotion funds and co-financing rules make optimal implementation difficult. Promotion or education initiatives on their own would not be as effective as incorporating promotion together with increasing availability of FV in schools.

Option 4: Driving Initiatives
In the face of the public health threat of obesity and related non-communicable diseases, this option provides the optimal legal and financial framework for increasing the availability of and access to fresh, quality fruits and vegetables in schools across the EU.

What in your experience are the necessary conditions for a successful initiative able to promote a sustainable increase in the consumption of fruit and vegetables by young people and to have a lasting influence on their behaviour?

In 2007, focus was on implementing a nationwide pilot of a school fruit and vegetable program called "Frugtkvarter".

The Ministry for Foods, Fisheries and Agriculture appropriated 8 million DKK (approx. 1 M €) for a free introduction period. This meant that almost 15 % of all school age children in Denmark received fruit for two months starting in September 2007.

At the this time, fruit was only readily available at 1 out of 3 schools in Denmark, and a large proportion of children were not meeting the goal for fruit and vegetable intake. The pilot tested a new model that combined a two-month introduction period with class or school based subscription, which in a small scale pilot showed promising results.

Although the evaluation has not yet been published, preliminary results shows that of the 234 schools that participated in the program 51 % implemented permanent school fruit schemes. An additional, 27 % of schools were planning to implement a scheme at the time of the evaluation. Compared with previous programs these results are impressive.

Equally important, the results show that school leaders, teachers, children and parents are enthusiastic about the program. The program has also provided market opportunities for both small and medium size fruit and vegetable wholesalers and large scale school fruit specialists. Finally, the most important factor is that the program has made agriculture policy highly visible for the Danish people.

In addition to providing the produce, children, parents, teachers and the local community need to be involved in the project to ensure effectiveness and sustainability.

The program has not only increased access to fruit and vegetables in schools; it has provided a practical incentive for schools to implement food and nutrition policies and other activities targeting healthy eating. Observational and qualitative studies showed that the project positively affected learning environment and social cohesion in the classroom. The project was used by teachers to place focus on healthy eating habits, and that it was a positive collective reminder to eat more fruit and vegetables. Improved concentration in older students and less interruption from otherwise hungry students were observed.

A Longer term financial framework is a necessary precursor for the success of the program.

What are the main obstacles to a successful initiative?

With political and financial support provided by option 4, 6 a day considers that there are no obstacles that cannot be overcome through for instance the networking of Member States' initiatives.
**What would be good criteria for evaluating the cost-effectiveness of an initiative?**

In terms of cost-effectiveness of an EU scheme, a reduction of deaths and disease from cancer, heart disease, stroke caused by too low intake of fruit and vegetables are enormous. Although no estimates on the cost of cancer exist at EU level, The European Heart Network\textsuperscript{25} has estimated the cost of low fruit and vegetable intake that could be attributed to Cardiovascular disease and stroke to 22.3 billion €, one could argue that an investment of 100 million would be cost-effective even if small changes in life-long fruit and vegetable consumption were made.

**What could be the value added of an EU initiative?**

Whilst the primary objective of an EU scheme is based on agriculture policy objectives, i.e. effectively promoting an increase in intake of fruit and vegetables, the scheme would also address other important EU objectives:

- Ensuring health in all policies (Article 152 of the Treaty of the Union) by addressing major health burdens and inequalities in the EU. For example, cardiovascular diseases represent an extremely uneven burden for the EU Member States ranging from 62% of all deaths in men in Bulgaria to 26% in France.

- Responding to the Lisbon agenda by
  - stimulating growth and employment since a healthier population will contribute to these objectives.\textsuperscript{26} The cost of cancer and other Chonic Non-Communicable diseases is associated with costs of lost production, formal and informal health care are large, and the implications for health systems go far beyond the financial burden.
  - supporting healthy aging; and
  - potentially creating new markets and access to new markets.

- Contributing to the EU environmental policy by reducing "food miles" and moving consumption patterns towards more plant based diets.

- Bringing EU closer to its citizens providing tangible benefits that respond to people’s everyday concerns about their children’s health and wellbeing.

(2) **How could it be improved?**

*Are there factors not taken into account or elements of uncertainty that could significantly influence the impact of the options under consideration? If so, what are they? What would be there influence?*

6 a day is not aware of factors or elements of uncertainty that could significantly influence the impact of the options under consideration. As stated above, 6 a day feels


that a combination of options 4 and 2 represents a way forward which assists in limiting uncertainties.

*Should the ISG seek to incorporate into its analysis an assessment of any specific impacts other than those envisaged in chapter 2?*

6 a day believes that the ISG has provided a highly relevant list of objectives. 6 a day would like to stress that the impact of an EU scheme can act as a trigger or a focal point for other health-related activities involving local communities and growers. In other words, it may have a multiplier effect.

*Do you have any examples of “best practice” that could improve the options?*

A number of cases describing best practice exist, and 6 a day would suggest that “best practice” can be derived from existing descriptive studies from experiences in MS and the review of school fruit and vegetable programmes worldwide published by the London School of Hygiene and Tropical Medicine in December 2007.

*What conditions (compulsory and/or optional) should be introduced and/or developed for the ‘Supporting Initiatives’ and ‘Driving Initiatives’ options?*

Products available for the scheme should be seasonal, locally grown and respect ‘nutrient profiles’ i.e. low in energy density.

In addition, 6 a day would like to suggest that the overall school environment must be in support of the school fruit scheme by ensuring that food products and beverages with high appeal to children (snacks and sweet soft drinks) are not available in the schools.

*(3) Is there any other option that you would consider adequate to reach the stated objectives?*

6 a day has not carried out an analysis of options other than those identified by the ISG.
**Grading:** the option would have a (1) very negative impact (2) negative impact (3) neutral impact (4) positive impact (5) very positive impact;

<table>
<thead>
<tr>
<th></th>
<th>Status Quo</th>
<th>Networking</th>
<th>Supporting Initiatives</th>
<th>Driving Initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long term increase of fruit and vegetables consumption among school children</td>
<td>(1)</td>
<td>(3)</td>
<td>(3)</td>
<td>(5)</td>
</tr>
<tr>
<td>Decrease in obesity of school children and health improvement</td>
<td>(1)</td>
<td>(3)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Increased fruit and vegetables consumption in poorer regions and by deprived persons</td>
<td>(1)</td>
<td>(3)</td>
<td>(3)</td>
<td>(5)</td>
</tr>
<tr>
<td>Appropriate level of initiative and administration; European value added</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>Appropriate disbursement of public funds (both national and EU)</td>
<td>(2)</td>
<td>(4)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>Positive impact on the environment</td>
<td>(2)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Bringing Europe closer to its citizens</td>
<td>(2)</td>
<td>(4)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
</tbody>
</table>