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Mapping of **National School
Food Policies** across the EU28
plus Norway and Switzerland

Stefan Storcksdieck genannt Bonsmann,
Therese Kardakis, Jan Wollgast,
Michael Nelson, Sandra Caldeira

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Joint Research Centre

Institute for Health and Consumer Protection (IHCP)

Contact information

Sandra Caldeira

Address: Joint Research Centre, IHCP, Public Health Policy Support, Via Enrico Fermi 2749, TP 127, 21027 Ispra (VA), Italy

E-mail: sandra.caldeira@ec.europa.eu

Tel.: +39 0332 78 3887

Fax: +39 0332 78 9059

<http://ihcp.jrc.ec.europa.eu/>

<https://ec.europa.eu/jrc/>

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Preface

Pressing issue of childhood obesity

A proper diet is vital for good health. The fact that dietary factors nowadays claim more lives in Europe and beyond than any other factors shows there is a clear need for action.¹ Rising overweight and obesity in all age groups across Europe is particularly worrying. To respond to these threats to public health, the European Commission's Directorate-General for Health and Consumers (DG SANCO) has devised a Strategy on Nutrition, Overweight and Obesity-related health issues,² and put in place the multi-stakeholder Platform for Action on Diet, Physical Activity and Health³ and the High Level Group (HLG) on Nutrition and Physical Activity⁴ as implementation tools. Furthermore, in February 2014, EU Member States adopted an EU Action Plan on Childhood Obesity for the period 2014-2020,⁵ and in May 2014, the WHO's Director-General has established a high-level Commission on Ending Childhood Obesity.⁶

1. S.S. Lim *et al.*: 'A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the *Global Burden of Disease Study 2010*', *The Lancet*, 380:9859 (2012), pp. 2224-2260. [http://dx.doi.org/10.1016/S0140-6736\(12\)61766-8](http://dx.doi.org/10.1016/S0140-6736(12)61766-8).

2. http://ec.europa.eu/health/archive/ph_determinants/life_style/nutrition/documents/nutrition_wp_en.pdf.

3. http://ec.europa.eu/health/nutrition_physical_activity/platform/index_en.htm.

4. http://ec.europa.eu/health/nutrition_physical_activity/high_level_group/index_en.htm.

5. http://ec.europa.eu/health/nutrition_physical_activity/docs/childhoodobesity_actionplan_2014_2020_en.pdf.

6. <http://www.who.int/dietphysicalactivity/end-childhood-obesity/en/>.

What the JRC is doing to help

The Joint Research Centre (JRC), as the European Commission's in-house science service, has started activities in the area of nutrition and public health, with one particular focus on childhood obesity. In close collaboration with DG SANCO, the JRC will draw on its experience in public health policy support, its independence of private and commercial interests as well as its networking and collaboration capacities to facilitate and drive improvements in school food policy development, implementation, monitoring, and evaluation. Improvements in these domains shall help children adopt healthy diet and lifestyle habits while allowing significant strides towards reducing the burden of childhood obesity in Europe.

Why this report?

The present report is the result of specific scientific support requested by the HLG related to its work on childhood obesity. It focuses on school food policies as a way to establish protected environments in which school children can learn about and experience core principles of healthy eating and drinking. The report summarises nutrition-related content of national school food policies across the EU28 plus Norway and Switzerland in a systematic manner and provides quick access to corresponding source documents. This overview is descriptive, *i.e.* it

does not allow any inferences on the actual implementation of the various school food policies or the degree to which they have succeeded or not in reaching the stated objectives. It is our hope that this report serves at least a two-fold purpose: 1) to facilitate the sharing of knowledge and experiences in school food policy development and implementation among policy makers and educators; and 2) to inform researchers of the *status quo* in European school food policy and

thus provide a baseline from which to study policy impact and effectiveness (including the development of suitable indicators).

Providing tasty and nutritious school food requires strong commitment by a multitude of stakeholders. But if done right, the time and money we spend on it today will reward us with social, economic, and health gains many times the initial investment.

List of abbreviations

BE	Belgium
DG SANCO	Directorate General for Health and Consumers
DIETS	Dietitians Improving Education and Training Standards
HLG	High Level Group on Nutrition and Physical Activity
JRC	Joint Research Centre
MS	Member States
NOPA	WHO database on Nutrition, Obesity and Physical Activity
SFP	School Food Policy/Policies
SHE	Schools for Health in Europe
SNIPE	School Nutrition Index of Programme Effectiveness
UK	United Kingdom
WHO	World Health Organization

Executive summary

This report deals with national school food policies across the EU28 plus Norway and Switzerland. In the face of a growing obesity epidemic among European children, the European Commission, the World Health Organization (WHO) and the UN have launched strategies on nutrition-, overweight- and obesity-related health issues. Many Member States have also developed national action plans on food, nutrition and physical activity. As the development of eating and physical activity habits occurs during the early stages of life, the various national and EU level policy documents have identified the school setting as a promising target for intervention. Furthermore, in 2006, the WHO Europe published a guidance paper to support the development of school nutrition programmes in the European Region.

The aim of this report

This report aims to inform public health policy makers, educators and researchers about the current European school food policy landscape. It does so by systematically assessing the nutrition-related content of the most recent school food policy for each of the 28 EU Member States (MS) plus Norway and Switzerland, highlighting various options intended to promote healthier school food environments to achieve given objectives, and providing quick access to the relevant source documents.

Analysis of European National School Food Policies (SFP)

The key findings are:

- All 30 countries have a SFP in place; 34 SFP documents (Belgium has separate policies for Flanders and Wallonia and the UK has separate policies for England, Northern Ireland, Scotland and Wales).
- There is an almost even split between voluntary guidelines and obligatory standards across the 34 SFP considered.
- Despite differences in history and extent of providing food at school, the primary SFP aims are common to most MS: to improve child nutrition (97% of all policies), to teach healthy diet and lifestyle habits (94%), and to reduce or prevent childhood obesity (88%).
- Not all SFP consider evaluation: 59% define outcome measures, the top five being food provision in school (56%), take up of school meals (35%), nutrition of children (29%), food consumption at school (24%), and financial viability of services (15%).
- Most SFP (>90%) employ food-based standards to ensure balanced menus; this is followed by portion size guidance (76%) and nutrient-based standards for lunch (68%) and other mealtimes (56%).
- Lunch and snacks appear as the most common focus at almost 90% of SFP.
- 65-82% of SFP set restrictions on beverages available or recommended to school

children, the majority supporting (free) access to fresh drinking water and specifically limiting or banning (sugar-sweetened) soft drinks.

- Sweet treats and savoury snacks are restricted in 59-79% of SFP, ranging from being allowed occasionally to complete bans.
- Energy and fat intakes are the most commonly referred to items in energy/nutrient-based standards for lunch at 65% and 59%, respectively.
- Vending machine offers are restricted in 53% of SFP; measures reach from (more) healthful options being recommended/promoted, to offers being in line with healthy eating guidance/standards, to (certain) unhealthful foods/drinks not allowed in vending machines, to vending machines not existing on or being banned from school premises.
- 65% of SFP stipulate training requirements of school catering staff.
- Food marketing limitations apply in 76% of SFP, with four SFP restricting the mar-

keting of foods and drinks high in sugar, fat or salt; 17 SFP specifying generic marketing restrictions; and five SFP setting restrictions for both.

In summary, all 28 EU Member States as well as Norway and Switzerland acknowledge the important contribution of school food to child health and development by providing either voluntary guidelines or mandatory regulations of what foods and drinks may/should be served in the school setting. This descriptive survey of European school food policies can help policy makers facilitate exchange of experiences and support researchers in assessing impact on public health.

In producing this comprehensive overview of school food policies in Europe, the JRC, DG SANCO and MS have worked together to meet the needs of European policy makers and public health researchers alike.

Introduction

All children deserve an environment that supports the formation of healthy dietary and lifestyle habits for optimal growth and long-term wellbeing. Worryingly, Europe is facing rising figures for childhood overweight/obesity—one in three children aged 6-9 years was overweight/obese in 2010 compared to one in four children of the same age in 2008.⁷ This is paralleled by persisting deficiencies in critical micronutrients among sizable fractions of children in both the 28 Member States of the European Union (EU) and other European countries. These conditions acutely put children's health in jeopardy and also increase their risk for chronic diseases such as type 2 diabetes, cardiovascular disease, and certain types of cancer later in life.⁸ On these grounds, urgent improvements to the status quo are needed.

Acknowledging the severity of the issue, the European Commission (EC), the World Health Organization (WHO), and the United Nations (UN) have all issued strategic documents on nutrition-, overweight- and obesity-related health issues.^{8,9,10,11} In particular,

the European Commission has established a coherent and comprehensive Community Strategy to address the ever more prevalent issue of overweight and obesity by adopting the White Paper *A Strategy on Nutrition, Overweight, and Obesity-related health issues* in 2007 (hereafter referred to as the 'Strategy').⁸ In addition, the EU High Level Group (HLG) on Nutrition and Physical Activity has recently drawn up an Action Plan to address the issue of overweight and obesity in children and young people, the EU Action Plan on Childhood Obesity 2014-2020.¹²

Since healthy eating and physical activity habits form during the early stages of life, the school setting is seen as a promising target for intervention. Measures may include nutrition and physical activity education as well as tailored food provision for optimal child growth and development; dedicated policies can be used to guide their implementation, monitoring and evaluation. Initiatives such as the Schools for Health in Europe (SHE) Network are testimony to the relevance of schools as a place to learn healthy diet and lifestyle habits.¹³

In 2006, the WHO Europe published a guidance paper to support the development

7. WHO European Childhood Obesity Surveillance Initiative (COSI), rounds 2008 and 2010.

8. http://ec.europa.eu/health/archive/ph_determinants/life_style/nutrition/documents/nutrition_wp_en.pdf.

9. WHO Global Strategy on Diet, Physical Activity and Health.

10. UN Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases.

11. http://www.euro.who.int/__data/assets/pdf_file/0005/193253/CONSENSUS-Vienna-Declaration-5-July-2013.pdf.

12. DG SANCO website, Public Health section, Key documents: EU Action Plan on Childhood Obesity 2014-2020. http://ec.europa.eu/health/nutrition_physical_activity/docs/childhoodobesity_action-plan_2014_2020_en.pdf.

13. <http://www.schools-for-health.eu/she-network>.

of school nutrition programmes in the European Region.¹⁴ This policy development tool outlines twelve steps to healthy eating for children and adolescents (*Table 1*). These steps are usefully borne in mind when looking at the food and nutrition standards or guidelines laid down in national school food policies across Europe.

The scientific evidence supports multicomponent interventions in school focused on improving both diet and physical activity.

Specialised educational curricula, trained teachers, supportive school policies, a formal physical education programme, healthy food and beverage options, and a parental/family aspect are included in the most promising approaches.^{15,16} Also of likely benefit are school garden programmes, including nutrition and gardening education and hands-on gardening experiences, as well as fresh fruit and vegetable programmes that provide free fruits and vegetables to students during the school day. Recent research furthermore

Table 1. *Twelve steps to healthy eating for children and adolescents (adapted from WHO 2006¹⁴).*

1.	A balanced and adequate diet should be based on a variety of foods predominantly of vegetable origin.
2.	Several portions of whole grain bread, grains, pasta, or rice or potatoes should be included every day.
3.	A variety of vegetables and fruits should be eaten, preferably fresh and local, several times a day.
4.	Fish, poultry or lean meat are interesting alternatives. Meat with higher fat content and processed meat products should be substantially limited. A good combination of beans, legumes, lentils occasionally can be a good replacement for meat or fish.
5.	Low-fat milk and low-fat, low-salt dairy products (kefir, sour milk, yoghurt and cheese) are preferable.
6.	Fat intake should be limited to not more than 30% of daily energy, and most saturated fats should be replaced with unsaturated options. Cooking fats should be reduced and adequately chosen.
7.	Foods that are low in sugar should be preferred, sucrose should only be used sporadically, and sugary drinks and sweets should only be consumed exceptionally.
8.	A low-salt diet is best. Total daily salt intake should be limited to 2 g in children although it can increase proportionately to energy intake as children grow older. Iodised salt should be used when there is a known problem with iodine status.
9.	Food should be prepared in a safe and hygienic way. Steaming, baking, boiling, or microwaving helps to reduce the amount of added fat.
10.	Young children should be introduced to food handling and cooking processes and encouraged to join in food preparation safely, whenever possible. Older children and adolescents should also learn about the preparation of food and cooking processes. All age groups should learn the importance of a healthy diet.
11.	The benefits of breastfeeding should be explained to children and adolescents.
12.	Children and adolescents should learn to enjoy physical activity and reduce time spent passively on TV, video and computer games as well as other sedentary activities. When possible they should be provided with opportunities to walk or cycle to school.

14. WHO (2006) *Food and nutrition policy for schools*.

15. D. Mozaffarian *et al.*: 'Population Approaches to Improve Diet, Physical Activity, and Smoking Habits. A Scientific Statement from the American Heart Association', *Circulation*, 126 (2012), pp. 1514-63.

16. A. Martin *et al.*: *Lifestyle intervention for improving school achievement in overweight or obese children and adolescents*, The Cochrane Library, 14 Mar 2014. <http://dx.doi.org/10.1002/14651858.CD009728.pub2>.

17. WHO (2006) *Food and nutrition policy for schools*, p. 24

suggests that dietary intakes in school children can be improved by presenting the more desirable food choices at school in an attractive and accessible way.¹⁸

As scientific support to the HLG and to get a clear picture as to what school-based measures for better diet and lifestyle education are seen as relevant in Europe, the JRC took on the challenge of producing a detailed

map of the different national school food policies. Such an overview allows policy makers to learn from one another and in doing so move towards best practice in a setting of widely differing cultures. At the same time, this map will help researchers in investigating potential links between school food policies and public health, thus giving an indication of the possible impact of such strategies.

18. A.S. Hanks, D.R. Just, B. Wansink: 'Smarter Lunchrooms Can Address New School Lunchroom Guidelines and Childhood Obesity', *J Pediatr*, 162(4) (2013), pp. 867-69.

Methodology

1. Policy search strategy and verification

To identify the school food policies in place in the EU (initially EU27, later EU28¹⁹) as well as Norway and Switzerland, we applied the tiered search strategy described below:

Step 1–WHO European Database on Nutrition, Obesity and Physical Activity (NOPA).²⁰

The NOPA database is a searchable online repository of corresponding policy documents and developments in the countries of the WHO European Region. On the NOPA website, we selected the 30 countries specified above and restricted the search to ‘Nutrition related’ and ‘Obesity related’. The list of results was checked for mentions of school food policies and any respective links used to access source documents.

Step 2–National ministerial websites and Notifications from Member States to the EC.

For countries for which NOPA did not hold a link to or made no mention of school food policy in the first place, we checked the websites of the national ministries commonly responsible for school food policy (*e.g.*, Health, Education, Nutrition, Agriculture,

Youth). In some cases, notifications from Member States to the European Commission gave insight into the school food policy situation.

Step 3–Scientific literature and reports.

The third source was scientific literature, which we searched via Pubmed and Google Scholar.^{21,22} References to school food policy documents were exploited. Additionally, the Implementation progress report of the Strategy for Europe on nutrition, overweight and obesity related health issues²³ as well as a report²⁴ by the UK Children’s Food Trust included relevant information from several Member States.

Step 4–Professional contacts. Where Steps 1 to 3 did not yield sufficiently useful results and in case of need for language support, we sought the help of contacts with knowledge of the respective national situation (*e.g.*, dieticians of the Thematic Network DIETS/DIETS2²⁵).

The validity of all source documents identified with the above strategy was confirmed by representatives of each MS, *i.e.* HLG mem-

19. EU28: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

20. <http://data.euro.who.int/nopa/>.

21. <http://www.ncbi.nlm.nih.gov/pubmed>.

22. <http://scholar.google.de/schhp?hl=en>.

23. http://ec.europa.eu/health/nutrition_physical_activity/docs/implementation_report_en.pdf.

24. http://www.childrensfoodtrust.org.uk/assets/research-reports/cft_uk_school_food_comparison.pdf.

25. <http://www.thematicnetworkdietetics.eu>.

bers checked policy references and pointed to other and additional sources where appropriate.

2. Data extraction and verification

To extract the policy content in a systematic and comparable way, we used a subset of the SNIPE²⁶ questionnaire developed by Public Health Nutrition Research Ltd, UK (see *Annex I* for a summary of the development of SNIPE). Where necessary, Google Translate was used to translate source texts into English before extracting relevant content items.

The questionnaire template was set up in Microsoft Excel®, version 14. The feasibility of the questionnaire and the template for data collection were tested in a pilot trial where the data from six different school food policies were extracted. The analysis of the pilot results and their discussion led to a revision of the questionnaire (see *Annex II* for the final questionnaire version).

The final data matrix consists of 34 columns to represent the policies identified for the 30 countries considered. Belgium has separate policies for Flanders and Wallonia, and the UK has separate policies for England, Wales, Scotland and Northern Ireland; hence the total of 34 policies. The semi-open questionnaire contains 20 questions with a number of pre-specified answers, resulting in 148 rows to complete per policy. Apart from the pre-specified answers, there often also was an option labelled 'Other' to include further information in an open-ended format.

All country data were reviewed by the respective HLG contact, and the final data analysed as described below. The total data collection process lasted from May 2013 to February 2014.

3. Data analysis and visualisation

Frequency percentages were calculated and visualised directly from the data matrix in Excel®, using the total number of 34 policies as the reference point. Colour-coded European maps were created using the Eurostat Intranet tool IMAGE.

26. School Nutrition Index of Programme Effectiveness.

School food policies in the EU28 plus Norway and Switzerland

Our survey shows that all 30 countries²⁷ have mandatory regulations or voluntary guidance on school food in place. Documents vary from defined lists of foods (dis-)allowed for sale on school premises to extensive guidelines or standards that, among others, specify school menu planning, procurement of catering services, staff training, kitchen and dining facilities, and marketing restrictions (see *Annex III* for quick reference to food- and nutrient-based standards by country). The year of publication of the most recent school food policy ranges from 2003 to 2014 (see *Annex IV* and *Annex V* for hyperlink(s) to school and pre-school food policy sources, respectively). In 82% of cases, the same or complementary policies also cover food provision in pre-school settings or corresponding age groups (not discussed further). The following sections provide more detail on the types of school food policy in Europe as well as the different recommendations or standards laid out in them.

1. Organisation of school food policy across Europe

School food policies (SFP) can be organised in various ways, the most prominent of which are that they either constitute a separate policy or are embedded in other policies such as for health or education. Across Europe, two thirds of SFP are established as

separate policies (*Fig. 1*). Some SFP are only mentioned within other policies, namely for obesity, education, and health inequalities, and some of the separate SFP are also referred to in these other policies. Additionally, in more than half of the cases (56%), SFP are mentioned in national action plans broadly addressing nutrition, physical activity and (child) health; other health education programmes; or corresponding legal documents (data not shown).

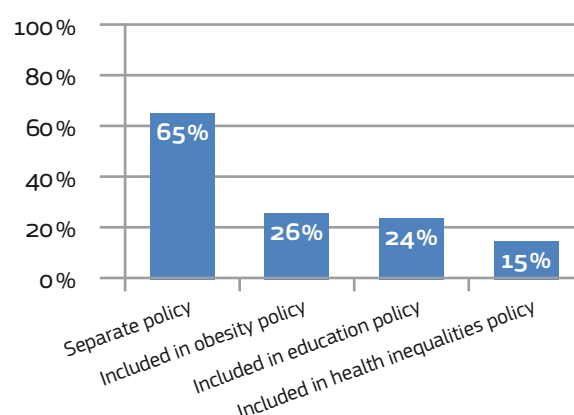


Figure 1. School food policy organisation in the EU28 plus Norway and Switzerland (n=34). Percentages do not sum to 100% as some separate policies may be further embedded in other policies.

Given that SFP commonly address aspects of both health and education, it is not surprising that the corresponding ministries either alone or in unison are the major responsible bodies for developing the policies (*Fig. 2*). However, other combinations of two or more ministries have also been encountered.

27. EU28 plus Norway and Switzerland.

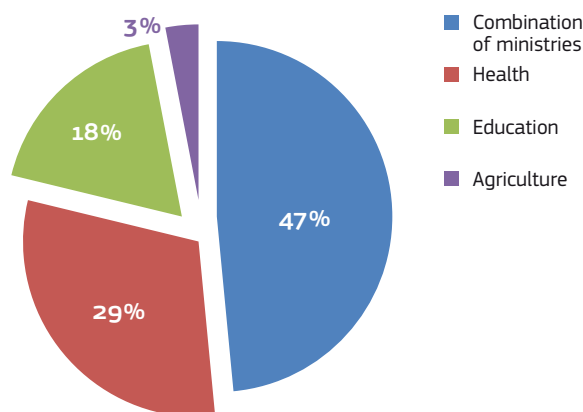


Figure 2. Ministries primarily responsible for developing school food policies in the EU28 plus Norway and Switzerland (n=34).

Out of the 34 SFP analysed, 18 set mandatory standards and 16 offer voluntary guidelines for school food (Fig. 3). At a country level, the balance is even (15 *vs.* 15); Belgium has voluntary SFP in both its provinces (Flanders and Wallonia) whereas the UK has mandatory SFP in all four constituent countries. One reason for not having mandatory national standards is that school food may be in the hands of autonomous regions (*e.g.* the federal states in Germany). On the other hand, some positive experiences have been reported with mandatory policies in that the legal framework can promote more reliable reporting on pre-defined indicators.

Objectives of the policies

The most frequent designated objective of current SFP is to improve child nutrition (Fig. 4). This is closely followed by the aim to make children learn healthy diet and lifestyle habits, and the wish to reduce or ideally prevent obesity. In two thirds of SFP, the reduction or prevention of malnutrition is a

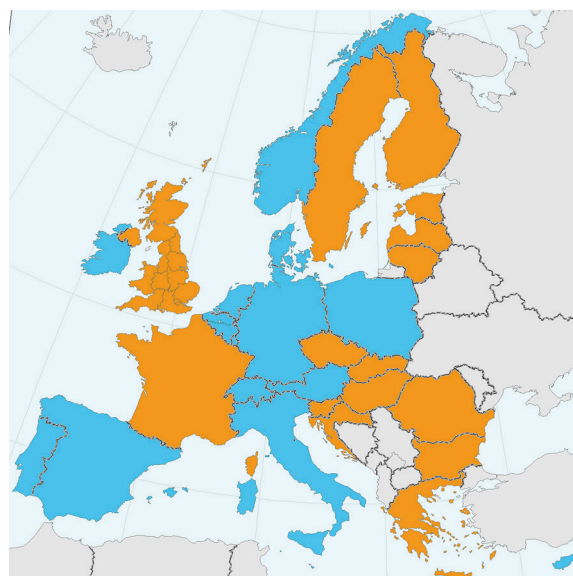


Figure 3. School food policy bindingness across the EU28 plus Norway and Switzerland (n=34); orange = policy mandatory, blue = policy voluntary.

stated or implied objective, and half of the SFP intend to tackle inequalities in health or improve attainment. To a lesser extent (<30%), SFP aim to: i) support parents, the local community, agriculture and economy; and ii) improve school attendance (data not shown).

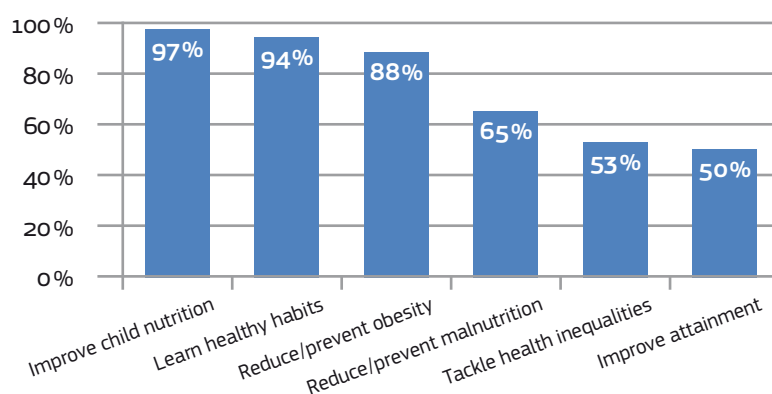


Figure 4. Designated objectives of school food policies in the EU28 plus Norway and Switzerland (n=34); only mentions above 50% of policies.

Evaluation criteria

Out of the 34 SFP, about three quarters (74 %) specify one or more measures for outcome evaluation. Food provision in school is most frequently used at slightly more than half of all policies (*Fig. 5*), followed by measuring school food take up and the nutrition of children; the latter is assessed based on criteria such as total food consumption, nutrient intake, child growth, and obesity levels. Food consumption at school and the financial viability of services complete the top five mentions. Other outcome measures specified in two or more policies are: the engagement of local farmers (12%); a reduction in health inequalities (6%); and the support of local economy (6%). Some countries focus particularly on the social aspect of dining at school, ensuring that pupils have enough time to eat (20-30 min, where specified) and can do so in a pleasant atmosphere with the support of teachers, trained kitchen staff and fellow students. This involves including

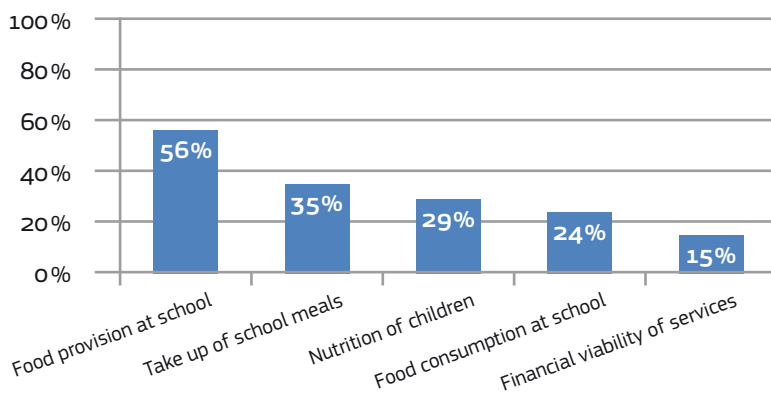


Figure 5. Outcome measures of school food policies in the EU28 plus Norway and Switzerland (n=34); top 5 mentions.

pupils and their parents in the planning of menus and giving them the chance to provide feedback on the food services. Generic control of compliance with legal requirements and food hygiene is also explicitly mentioned by some countries.

2. Types and focus of school food standards

This section describes in more detail the actual content of the school food policies. Where possible, emphasis is given to standards and recommendations that relate to areas for action in the newly adopted EU Action Plan on Childhood Obesity 2014-2020.²⁸ These are in particular: i) ‘Promote healthier environments, especially in schools and pre-schools’; ii) ‘Make the healthy option the easier option’; and iii) ‘Restrict marketing and advertising to children’.

As school days vary in length and organisation across the 30 countries considered, the corresponding SFP differ in the meal-times covered. Lunch and snacks appear as the most common focus at almost 90% of SFP, followed by breakfast specifications set in two thirds and dinner in about half of SFP (*Fig. 6*). Several countries actually rule or recommend that all food (and beverages) available on school premises should comply with specified standards.

28. DG SANCO website, Public Health section, Key documents: EU Action Plan on Childhood Obesity 2014-2020. http://ec.europa.eu/health/nutrition_physical_activity/docs/childhood_obesity_actionplan_2014_2020_en.pdf.

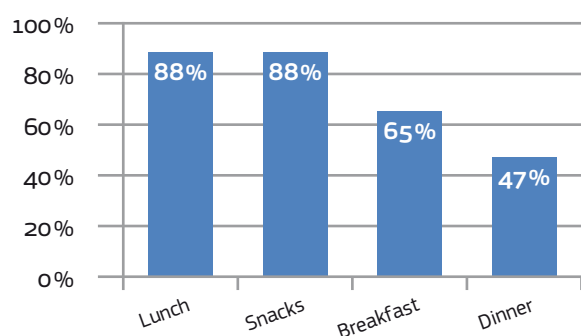


Figure 6. Meals covered in school food policies across the EU28 plus Norway and Switzerland (n=34).

The vast majority of SFP (>90%) define or guide school meal composition at the level of foods and food groups, be it for lunch or other mealtimes (Fig. 7). This is followed by the provision of age-appropriate portion sizes in three quarters of SFP, and nutrient-based standards for lunch in two thirds. Still more than half of all SFP specify nutrient-based standards for mealtimes other than lunch, and they consider catering practices, staff training as well as dining spaces and facilities. As regards the latter, Germany for example recommends that the dining room is bright-coloured and has appropriate light-

ing, is attractively decorated (e.g. plants, pictures, table decoration), has easy-to-clean floors and furniture, and ideally offers 1.4-1.7 m² of space per customer. Similarly, Malta suggests bright murals with a food theme, new tables and chairs, and background music. Various SFP generically state that dining facilities should support the educational experience related to food, hygiene and health and provide opportunities for social interaction and development.

Recipes are included in 47% of SFP, and around 40% address kitchen facilities/equipment (41%), procurement practices (38%), and food arrangement/presentation (38%). In this context, Austria, for example, recommends that a minimum of 10 pieces of fruit (at least 3 different types) are on display in every break, and the Maltese SFP proposes posters promoting healthy eating with pictures of fruit and vegetables as well as new menu boards with clear information and prices. Flanders emphasises that in vending machines, a balanced selection of drinks

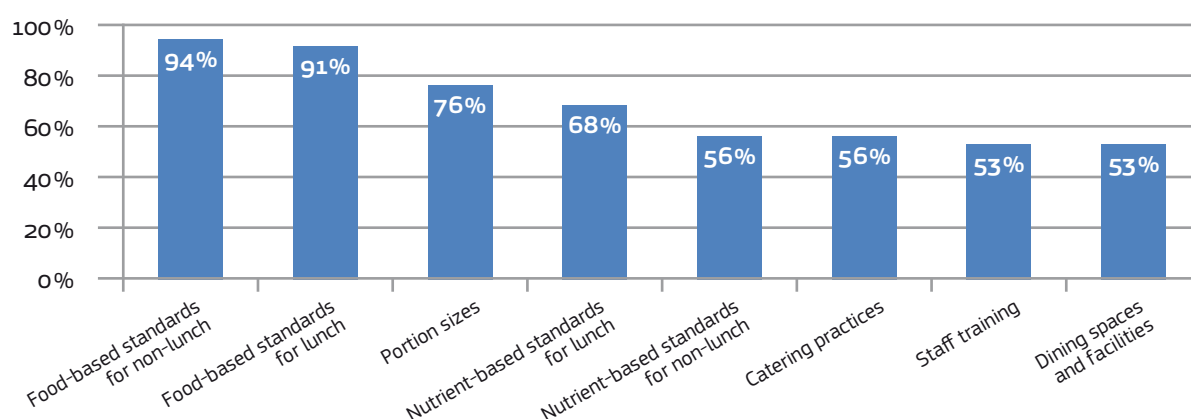


Figure 7. Common types of guidance or standard across school food policies in the EU28 plus Norway and Switzerland (n=34); only mentions above 50%.

(including water, milk, and fruit juices) and snacks (including fruit, high-fibre biscuits, and dairy) should be available and the nutritionally more favourable options promoted through lower price or more access points.

Food recovery/wastage features in 26%, a reference to minimum or appropriate staffing levels in 24%, and specifications of food contact materials in 21% of SFP.

Specific dietary requirements (*e.g.* due to religious/cultural/ethical constraints, food allergies or intolerances), local and seasonal sourcing of (organic) foods, hygiene and safety aspects, and giving children enough time to eat (20-30 min, where specified) are mentioned repeatedly in addition to the pre-specified answers (data not shown).

Food-based standards

Among the food-based standards specified for lunch and other mealtimes (*Table 2* and *Annex III* (*Tables III.1* and *III.2*)), the restriction of certain beverages (mainly soft drinks) features most prominently. Most SFP also foresee the provision of fruit and vegetables (F&V) and (free) access to fresh drinking water throughout the day. Furthermore, many SFP restrict the use of salt (in food preparation and/or at the table) as well as the availability of sweet treats and (deep-) fried/processed food products. Whereas restrictions on starchy food cooked in fat/oil in general appear in about half of all SFP, crisps/savoury snacks in particular are not allowed in well over half of SFP (especially for mealtimes other than lunch).

Table 2. Frequency of food-based standards across school food policies in the EU28 plus Norway and Switzerland (*n*=34); n/a = not applicable. Also see Annex III.

Food-based standards	For lunch	For other mealtimes
Drinks limited to specific types	82%	82%
F&V provision	79%	68%
Fresh drinking water	79%	68%
Soft drinks restricted	71%	65%
Sweet treats restricted	68%	79%
Frequency of serving dairy	65%	n/a
(Deep-)fried/processed products restricted	65%	65%
Salt provision restricted	65%	53%
Frequency of serving non-meat/non-dairy protein	59%	n/a
Frequency of serving (oily) fish	59%	n/a
Crisps/savoury snacks restricted	59%	74%
Frequency of serving (red) meat	53%	n/a
Starchy food cooked in fat/oil restricted	53%	53%

As for the frequency of providing certain foods or food groups for lunch, dairy products are mentioned most often, followed by non-meat/non-dairy protein sources, (oily) fish, and (red) meat. In the particular case of dairy products, the frequency or portion size occasionally is guided by a set amount of calcium to be provided.

Several SFP recommend or require choosing low-fat products and modes of food preparation, sometimes specifying the type of oil or fat (not) to be used. Whole grain alternatives are explicitly referred to in various SFP (*e.g.* BE-Flanders, Bulgaria, Croatia, Ireland,

Spain, Switzerland), and limiting or avoiding food additives is seen as important in SFP including those of BE-Wallonia, Croatia, Latvia, Lithuania, and UK-England.

Some countries (France, Germany, Hungary, Italy, and BE-Flanders) organise school food provision along menu cycles, *e.g.* by defining different dishes to cover a period of 20 days.

There is large variation between SFP as to how the food-based standards are phrased. For example, whereas some countries simply request that fruit and vegetables be served daily or a certain number of times per week, many others detail (age-appropriate) amounts and how they should be integrated in the (lunch) menu (soup, salad, dessert, etc.). Of note, more emphasis is given to vegetables than to fruit.

As regards the restriction of soft drinks (*e.g.* sugar-sweetened, artificially sweetened, squash), this ranges from considering them acceptable occasionally (*e.g.* Wallonia, Switzerland) to their complete prohibition (*e.g.* Hungary, Romania). In turn, the recommended or allowed beverages commonly comprise water, unsweetened tea, (low-fat) milk and (diluted) fruit juice. Caffeinated and alcoholic beverages are explicitly prohibited or restricted to certain age groups in some SFP, *e.g.* Austria, Belgium, Czech Republic, Hungary, and Latvia. To facilitate the healthy choice, Luxembourg recommends making water cheaper than sugared drinks and phasing out all sugary drinks distributors.

Restrictions of sweet treats (chocolate, confectionery, cakes, biscuits, etc.) span from voluntary recommendations not to offer sweets (*e.g.* Norway, Spain) to pre-defined binding lists of allowed sweets (*e.g.* Cyprus, Greece) to complete prohibition (*e.g.* England, Sweden). The same holds for crisps and other savoury snacks.

Energy/nutrient-based standards

Standards for energy and nutrients are explicitly cited less frequently in SFP than food-based standards, although the composition of meals and menus is likely to be guided at least in part by their nutritional contribution. Reference points for energy and fat content of foods or meals are specified most often for both lunch and other mealtimes, followed by protein for lunch and sugars for other mealtimes (*Table 3*, and *Annex III (Tables III.3 and III.4)*). The other pre-specified nutrients are mentioned in 32-47% of SFP for lunch and in 21-32% of SFP for other mealtimes.

Where present, the energy-based standards commonly define that lunch should provide around a third of a child's daily energy needs. Denmark specifies recommendations for a small and a big meal. The small meal (ages 7-10 years) should provide 1800-2100 kJ, whereas the big meal (ages 11-15 years) should contain 2200-2500 kJ; additionally, there are recipes covering 185 different meals containing the right amount of energy and nutrients. The Czech SFP points out that in schools with a strong emphasis on physical activity, energy intake references can be increased by 30%.

Table 3. Frequency of energy/nutrient-based standards across school food policies in the EU28 plus Norway and Switzerland (n=34). Also see Annex III.

Nutrient-based standards	For lunch	For other mealtimes
Energy	65%	44%
Fat	59%	44%
Protein	50%	26%
Total carbohydrates	47%	32%
Iron	44%	24%
Calcium	44%	26%
Vitamin C	44%	29%
Fibre	44%	24%
Sugars	41%	35%
Sodium	41%	24%
Folate	38%	29%
Saturated fat	38%	26%
Zinc	32%	21%
Vitamin A	32%	21%

SFP tend to agree on 25-35% of daily calories from fat as the appropriate reference point. Poland and the Czech Republic are examples of SFP according to which animal fat explicitly is to be limited and preference to be given to vegetable fat, respectively. For saturated fat, some SFP (*e.g.* Croatia, Estonia, Finland) set an intake limit of max. 10% of daily calories, whereas Italy uses 30% of total fat as the reference point. In this context, examples of countries with SFP mentioning trans fats (to be limited) are Bulgaria, Slovenia and Spain.

Regarding the question about standards for non-milk extrinsic sugars, some SFP rather refer to ‘simple sugars’ (*e.g.* Croatia, Slove-

Table 4. Vending machine standards/guidance in school food policies across the EU28 plus Norway and Switzerland; countries not listed do not refer to vending machines in their SFP.

Vending machine policy	Country
Vending machines don't exist on or are banned from school premises	Cyprus, Denmark, France, Malta,* Slovakia,** Slovenia
(Certain) unhealthful foods/drinks not allowed in vending machines	Bulgaria, Hungary, Latvia, Lithuania
Vending machine offer in line with healthy eating guidance/standards	Austria, Netherlands, Portugal, UK-Scotland, UK-Wales
(More) healthful options recommended, promoted	BE-Flanders,*** Italy, Spain

* banned in all public and most private schools; ** ban specific to vending machines offering sweets; *** balanced options should be cheaper or more widely available.

nia), ‘added sugars’ (*e.g.* BE-Wallonia, Bulgaria), ‘free sugars’ (*e.g.* Czech Republic), or just ‘sugar’ (*e.g.* Hungary, Slovenia). Where specified, commonly a maximum of 10% (Poland: 10-12%) of total daily energy from such sugars is set.

Where SFP go beyond the prompted list (*Table 3*), they mostly make reference to national nutrient intake recommendations. Of note, several countries (*e.g.* Bulgaria, BE-Wallonia, Germany, Italy, Portugal, Slovenia) point out the use of iodised salt, and BE-Wallonia, Bulgaria, Lithuania, Slovenia and Switzerland explicitly mention iodine in their nutrient-based standards. Overall it appears that the overconsumption of calories, especially due to excess fat, is of more widespread concern than the insufficient intake of essential (micro)nutrients.

Vending machine restrictions

Guidance or restrictions on vending machines in schools vary considerably across countries. Examples range from recommendations for balanced offers to defined lists of foods and beverages allowed/prohibited in vending machines to outright bans of vending machines on school premises (*Table 4*). Notably, Spain sets a portion maximum of 200 kcal for vending machine offers, and Portugal recommends that, where feasible, vending machines are accessible only outside regular food service hours.

Training requirements of school catering staff

Two thirds of SFP stipulate training requirements of school catering staff (*Fig. 8*). In some cases, legal acts set out formal training standards for any personnel involved in handling food, including food business operators and caterers. While SFP from Italy, Latvia and Sweden do not legally mandate training requirements, they do emphasise the importance of properly trained staff. Countries without general training requirements for school catering staff are Cyprus, Czech Republic, Ireland, Lithuania, Netherlands, Norway, Portugal, and UK-England.

Restrictions on food marketing

Figure 9—essentially a heatmap—shows the extent to which different countries restrict food marketing in schools. Restrictions range from specific marketing limits for the three categories of High-Fat/Sugar/Salt (HFSS) foods and drinks pre-stated in

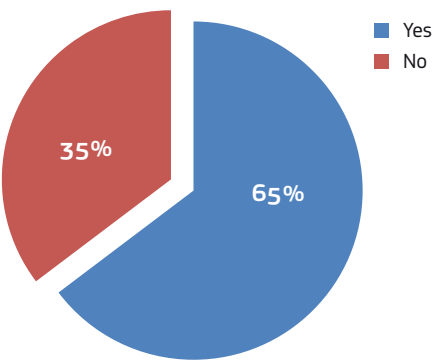
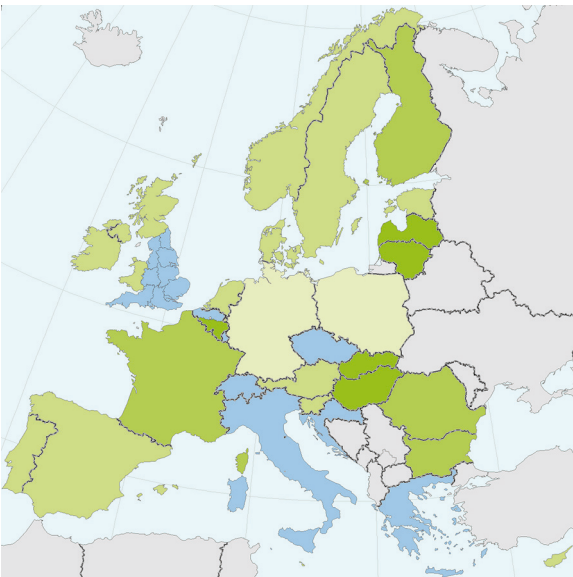


Figure 8. School food policies specifying training requirements for school catering staff across the EU28 plus Norway and Switzerland (n=34).



- Specific marketing limits for the three categories stated in SNIPE (*i.e.* drinks high in sugar, foods high in sugar, and savoury snacks high in fat or salt) combined with restrictions of a more generic kind or focussing on other types of foods/drinks as well.
- Marketing restrictions only on the three food/drink categories pre-specified in SNIPE.
- Food marketing restricted in some other way without making reference to the three pre-defined categories in SNIPE.
- Food marketing restricted in some other way without making reference to the three pre-defined categories in SNIPE, and including a positive role of marketing/sponsoring.
- No food marketing restrictions specified.

Figure 9. Food marketing restrictions in schools across the EU28 plus Norway and Switzerland (n=34).

SNIFE combined with other, unspecific restrictions on one end of the spectrum, to unspecific restrictions alone on the other. Germany and Poland are interesting cases in the sense that they acknowledge a positive role of marketing. Germany considers sponsoring as a means to establish co-operations with external partners and increase school budget, but a clear distinction is made from product-specific marketing. The Polish perspective, on the other hand, is that school can be a place for advertising food products, but not for the sale of food products not recommended in children's diets.

Out of the countries surveyed, two-thirds report to have food and nutrition established as mandatory elements in their national education curricula (*Fig. 10*). A majority of those who do not mandate food and nutrition education nonetheless acknowledge the importance of the subject or strongly recommend its inclusion in the curriculum through dedicated policies or national action plans on healthy eating and lifestyle.

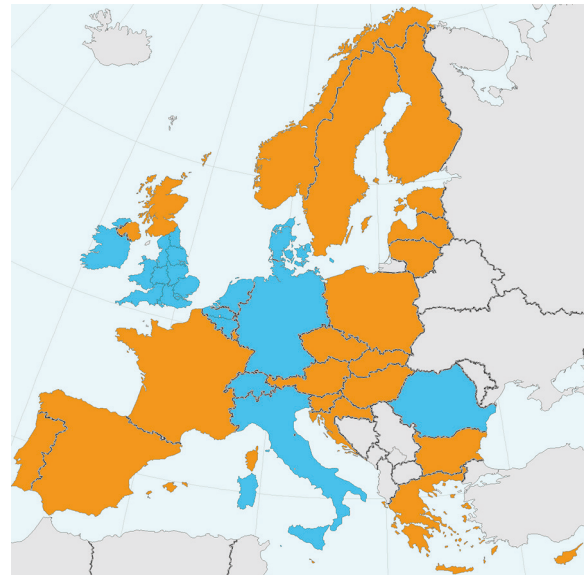


Figure 10. Countries in the EU28 plus Norway and Switzerland where nutrition education is a mandatory part of the national education curriculum ($n=34$); orange = mandatory; blue = not mandatory.

Concluding remarks

Our school food policy analysis shows that all 28 EU Member States plus Norway and Switzerland recognise the importance of proper child nutrition by having a SFP of some form in place. This may range from a list of foods (dis)allowed to be sold on school premises (Cyprus) to extensive voluntary guidance (*e.g.* Germany, Italy) or mandatory standards (*e.g.* Finland, Slovenia). Overall, SFP are mandatory in 15 countries and voluntary in the other 15 countries. Ministries of Health or Education, either alone or in combination, are the most common governmental departments primarily responsible for SFP development. The vast majority of SFP employ food-based standards and aim to improve child nutrition, teach healthy diet and lifestyle habits and reduce or prevent obesity. Other aspects addressed are energy/nutrient-based standards, restrictions on food marketing and vending machines, and the importance of training catering and other staff involved in handling food.

Our analysis shows that national SFP standards and recommendations to varying degrees are in line with the guidance provided in the WHO tool for the development of school nutrition programmes.²⁹ Furthermore, they clearly relate to at least four of the eight Areas for Action in the recently adopted EU Action Plan on Childhood

Obesity 2014-2020,³⁰ namely: 1) Support a healthy start in life; 2) Promote healthier environments, especially in schools and pre-schools; 3) Make the healthy option the easier option; and 4) Restrict marketing and advertising to children. The following are just some statements highlighted in said Action Plan that were also found to have a more or less prominent role in SFP across Europe:

- ‘...vital that meals provided in schools are healthy, that the nutritional quality of any other foods sold in schools is improved, that the healthy option is always the easier option...’;
- ‘...ensure ease of access to healthy and nutritious food and to allow sufficient time for such foods to be consumed making healthy options more affordable and attractive...’;
- ‘...limit exposure to less healthy food options...’;
- ‘...reducing food waste.’;
- ‘...provide children and young people with fresh drinking water in schools...’.

At the same time, it is worth pointing out that little more than half of all SFP specify outcome measures. In other words, more targeted efforts towards monitoring and evaluation – see Action Area 7 in the Childhood Obesity Action Plan – would help

29. WHO (2006) *Food and nutrition policy for schools*.

30. http://ec.europa.eu/health/nutrition_physical_activity/docs/childhoodobesity_actionplan_2014_2020_en.pdf.

understand what difference SFP can make and whether it is going in the intended direction. The complete SNIPE questionnaire, which covers seven domains including ‘Monitoring’ and ‘Outcome and impact measures’, offers pertinent indicators and could thus help stimulate effective monitoring/evaluation, and it would allow doing so in a harmonised way across Europe. Lack of internationally comparable data remains an important barrier to evidence-based policy making. Further feasibility trials are planned to inform any necessary revision of SNIPE, and support from MS would aid its Europe-wide implementation.

Data gathered through SNIPE will be useful to public health research, particularly in the field of health economic impact evaluations to quantify the benefit of school meals. Other suggested areas where (further) research could help develop and implement effective measures for improved nutrition in schools and beyond are (non-exhaustive list):

- Strategies to establish free access to fresh drinking water in all school environments and thus promote and achieve healthy drinking habits.
- Food arrangement and display to nudge students towards more favourable dietary choices.
- Social marketing approaches addressing the individual and local communities.
- Impact of school food and other healthy lifestyle measures on educational attainment.
- Low budget measures likely to result in tangible improvements.

- Use of new technologies in SFP implementation, monitoring and evaluation.

Where sufficient scientific evidence has accumulated on a specific measure, clear goals for action need to be defined and pursued by strategic partnerships between all relevant stakeholders.

Notably, since our survey is limited to SFP content description, the results do not allow any inferences about SFP effectiveness or the absence thereof. However, they could be used as a starting point for investigations into the possible correlations between different types of school food policy and rates of childhood overweight/obesity and other parameters of public health interest. The fact that the data presented have been cross-checked by national HLG representatives for all countries makes this report a uniquely reliable resource for information about the status quo of school food policy in Europe.

We hope that this report and the underlying database will help policy makers learn from one another about SFP options and measures and in doing so move towards best practice in the context of widely differing cultures. At the same time, this map aids researchers in investigating potential links between school food policies and public health, thus giving an indication of the possible benefit of such strategies. It is through these combined efforts that we are most likely to contribute to halting the rise in childhood obesity in Europe by 2020. No less is the goal of the EU Action Plan on Childhood Obesity.

ANNEX I: Origins and development of SNIPE

(School Nutrition Index of Programme Effectiveness)

M. NELSON

22 January 2014



Introduction

School food has changed dramatically in the last 10 years. Across Europe, the United States, Brazil, China, Africa and elsewhere, the impetus to review the role of school food as a means to improve child health, educational outcomes, and economic and agricultural security has fostered a raft of guidelines and legislation to change what children eat. There has been nothing less than a revolution in school food around the world.

In order to track these changes in policy and implementation, to understand their impact on school feeding on health and educational outcomes, and to evaluate their cost-effectiveness, several international agencies (World Bank, World Food Programme (WFP), World Health Organization (WHO), Partnership for Child Development (PCD), EU Joint Research Centre (JRC)) have collected information about school food and nutrition programmes through their principal contacts. Enquiries are typically at national level, but regional information is also sought, especially where responsibility has been delegated to provincial or regional governments.

In discussion with representatives from these agencies (and others), and with those providing the information, it became apparent that there was considerable overlap in the interests of these agencies and the information being sought. Yet it was often the same person in each country or region who was providing the same information to different agencies, often in differing formats. Discussions with information gatherers, providers and users suggested that a common, coherent set of questions, shared by all and used internationally, would improve the quality of the information collected and reduce the burden on the information providers particularly.

An important aspect of the development of SNIPE was the concept that good quality information across a broad range of topics (domains) could be used to model the impact of policy and implementation on outcomes, assess the cost-effectiveness of school food and nutrition programmes, and help countries identify best practice. Hence the notion of an ‘index of programme effectiveness’ was generated. Included in the index was an evaluation of the quality of the data itself.

Aims and objectives

The development of an index of effectiveness of school food and nutrition programmes has three purposes:

- to characterise practices which support improved nutrition for children through school nutrition programmes, with elements relating both to viability and sustainability;
- to promote understanding of the factors that promote or impede the successful implementation of school food and nutrition programmes;
- to stimulate changes in policy and practice that are likely to have maximum impact and benefit.

The four principles underpinning SNIPE are:

- *Breadth of coverage.* SNIPE must be comprehensive in its assessment of factors that influence the success of school food and nutrition programmes to improve child nutrition and health.
- *Commonality.* SNIPE must provide the basis for multiple agencies to obtain information using a common format and questions. Data sharing between agencies is key.
- *Evidence.* The data underpinning the index must be objective, robust and valid. While self-assessment has a role, the underlying principle must be that primarily objective measures (qualitative as well as quantitative) are used in the development and calculation of the index. These can include evidence of the presence and development of policies, and evidence relating to implementation.
- *Outcomes.* There must be clear and objective links between policy, implementation and outcomes relating to child health, nutrition and other benefits relating to educational attainment, family and com-

munity involvement, agricultural support and sustainability, etc.

Development of SNIPE

In purely pragmatic terms, one of the aims of the consultation and development of the SNIPE questionnaire is to capture much of the common information that is currently being collected at different times by different agencies from the same information providers in each country. The aim is to improve the efficiency and consistency with which the information is gathered, and to reduce the burden on information providers by reducing the number of times that they are asked to provide information.

Questionnaires used by World Bank, WFP, WHO, PCD, JRC, and examples from the Children's Food Trust Annual Survey (UK) and the School Nutrition Dietary Assessment Study, were obtained by the author and compiled to make a unified questionnaire.

Domains

Questions were classified in seven domains: Domain 1. School food policy and its objectives (19 questions).

Domain 2. Implementation (29 questions).

Domain 3. Monitoring (13 questions).

Domain 4. Finances (15 questions).

Domain 5. Outcome and impact measures (3 questions).

Domain 6. Social protection and sustainability (12 questions).

Domain 7. Availability and validity of the elements of the index (7 questions).

Modification

The questionnaire and domain list was circulated to the agencies involved, and their comments sought. All responded, and the questionnaire and domain names and organisation were modified. The modified questionnaire and domains were then circulated to half a dozen national focal points with responsibility for school food and nutrition programmes. They were asked to say simply whether the information requested was available, and whether they regarded it as essential for their own purposes or if it would simply be helpful to have were it available. Finally, the questionnaire was shared with the health outcome modelling team and the UK Health Forum for their comments on the utility of the data for modelling purposes and the creation of an index of effectiveness.

The next version of the questionnaire is in development based on the feedback to date. This will be tested with a wider audience, who will be asked to provide actual data and whose feedback and responses will be used to develop the first version for wider use internationally.

Acknowledgements

I would like to acknowledge the assistance of Ieva Feldman in compiling successive versions of SNIPE, and to thank the very many colleagues who have contributed feedback and helpful comments to improve the design and relevance of the SNIPE questions.

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ANNEX II: SNIPE questionnaire

Version 2 (4 July 2013)

Domain 1. School Food Policy and its objectives	
1.6	Is school food policy a separate policy, or is it covered in other policies or strategies? <i>(tick all that apply)</i> a. It is a separate policy b. Obesity c. Health inequalities d. Education e. Other (please specify)
1.7	Which ministry or government office is primarily responsible for developing school food policy? <i>(tick one box)</i> a. Education b. Health c. Agriculture d. Welfare e. Treasury f. A combination of ministries or departments (please describe) g. Other (please specify)
1.8	What is the year of publication of the most recent version of the school food policy a. Year: b. Provide reference(s) for latest version of policy:
1.9	Is policy embedded in legislation or issued as guidance? <i>(tick one box)</i> a. Embedded in legislation b. Issued as guidance c. Other (please describe)
1.10	What are the designated objectives of the published school food policies <i>(tick all that apply)</i> a. Improve child nutrition b. Reduce malnutrition c. Prevent malnutrition d. Reduce obesity e. Prevent obesity f. Tackle health inequalities g. Improve attainment h. Improve school attendance i. Support local agriculture j. Support local economy k. Support parents and local community l. Other (please specify)
1.12	What provision does your school food policy cover? <i>(tick all that apply)</i> a. School lunch b. Breakfast c. Snacks and after school services d. Vending services e. Packed lunches f. Other (please describe)
1.13	Are there defined outcome measures by which policy is evaluated? a. Yes b. No GO TO QUESTION 1.15

Domain 1 (cont.)

1.14 What are the outcome measures by which school food policy is evaluated? *(tick all that apply)*

- a. Take up of school meals (breakfast, lunch, etc.)
- b. Food provision at school
- c. Food consumption at school
- d. Nutrition of children (total food consumption, nutrient intake, growth, obesity)
- e. Attainment
- f. Attendance
- g. Authorized absence (e.g. sickness)
- h. Unauthorized absence (e.g. truancy)
- i. Reduction in health inequalities
- j. Financial viability of school food services, including procurement practices
- k. Engagement of local food growers
- l. Support of local economy
- m. Other (please specify)

1.15 Is there national or regional/provincial food policy or guidance relating to food provision in pre-school settings?

- a. Yes
- b. No

1.16 What is the year of publication of the most recent version of the pre-school food policy or guidance?

- a. Year:
- b. Provide reference(s) for latest version of policy:

Domain 2. Implementation

2.2 What meals are covered by the school food policy? *(tick all that apply)*

- a. None
- b. Breakfast
- c. Lunch
- d. Dinner
- e. Snacks
- f. Other (please specify)

2.3 Is school food policy supported by standards or guidelines?

- a. Yes
- b. No GO TO QUESTION 2.8

2.4 Which standards/guidelines are in place, and are they mandatory or voluntary? *(tick all that apply)*

- a. Food-based standards for lunch
- b. Nutrient-based standards for lunch
- c. Food-based standards for food other than lunch
- d. Nutrient-based standards for food other than lunch
- e. Recipes
- f. Portion sizes
- g. Kitchen facilities and equipment
- h. Dining spaces and facilities
- i. Staffing levels
- j. Staff training
- k. Catering practices
- l. Procurement practices
- m. Other (please specify)

Domain 2 (cont.)

- 2.5 What food-based standards are in place for school food at lunchtime? *(Tick all that apply)*
- a. There are no food-based standards for food and drink provided at lunchtime
 - b. Specified amounts of fruit and vegetables must be provided daily for each child
 - c. Specified number of times red meat served (specify number of days per week)
 - d. Specified number of times other sources of protein served (specify number of days per week)
 - e. Specified number of times dairy products served (specify number of days per week)
 - f. Oily fish should be on the school lunch menu at least once every three weeks
 - g. Restrictions on availability of fried or processed potato products
 - h. Cakes and biscuits only available at certain times
 - i. Deep fried food restricted (specify number of times per week, if applies):
 - j. Starchy food cooked in fat or oil restricted (specify number of times per week if applies):
 - k. Chocolate and confectionary not allowed
 - l. Crisps and savoury snacks not allowed
 - m. Fresh drinking water must be provided and be easily accessible
 - n. Drinks limited to specific types (*e.g.* milk, fruit juice, water, combination of these)
 - o. Soft-drinks not allowed (*e.g.* sugar-sweetened or artificially-sweetened soft drinks, squash)
 - p. Salt provision is restricted
 - q. Other (please specify other standards by school level (primary or secondary), or provide copy of or reference to published standards)
- 2.6 What nutrient-based standards are in place for school food at lunch time? *(Tick all that apply)*
- [NB: This question was duplicated for school food other than lunch.]
- a. There are no nutrient-based standards in place at lunch time
 - b. Energy
 - c. Fat
 - d. Saturated fat
 - e. Total carbohydrate
 - f. Non-milk extrinsic sugars
 - g. Fibre
 - h. Protein
 - i. Iron
 - j. Zinc
 - k. Calcium
 - l. Vitamin A
 - m. Vitamin C
 - n. Folate
 - o. Sodium
 - p. Other (please specify other nutrient-based standards by school level (primary or secondary), or provide copy of or reference to published standards)

Domain 2 (cont.)

2.7 What food-based standards are in place for school food other than lunchtime (including vending services)? *(Tick all that apply)*

- a. There are no food-based standards for food and drink provided other than lunchtime
- b. Specified amounts of fruit and vegetables must be provided at specified times for each child
- c. Restrictions on availability of fried or processed potato products
- d. Cakes and biscuits only available at certain times
- e. Deep fried food restricted (specify number of times per week, if applies):
- f. Starchy food cooked in fat or oil restricted (specify number of times per week if applies):
- g. Chocolate and confectionary not allowed
- h. Crisps and savoury snacks not allowed
- i. Fresh drinking water must be provided and be easily accessible
- j. Drinks limited to specific types (*e.g.* milk, fruit juice, water, combination of these)
- k. Soft-drinks not allowed (*e.g.* sugar-sweetened or artificially-sweetened soft drinks, squash)
- l. Salt provision is restricted
- m. Other (please specify other standards by school level (primary or secondary), or provide copy of or reference to published standards)

2.19 Are there general training requirements for school catering staff?

- a. Yes
- b. No
- c. Other (please specify)

2.24 Are there restrictions on marketing of food or drink on school premises *(Tick all that apply)*

- a. Drinks high in sugar (*e.g.* carbonated soft drinks, squash)
- b. Food high in sugar (*e.g.* sweets, confectionary, chocolate)
- c. Savoury snacks high in fat or salt (*e.g.* crisps, salted nuts)
- d. Other (please specify)

2.25 Is food and nutrition a mandatory part of the educational curriculum in your country? *(Tick one box)*

- a. Yes, on a national level
- b. Yes, but only in some regions, provinces or local authorities
- c. Yes, but only in selected schools
- d. No
- e. Other (please specify)

ANNEX III: Overview of food- and nutrient-based standards as predefined in SNIPE –for lunch (III.1 and III.2) and other mealtimes (III.3 and III.4)

Table III.1. Food-based standards for lunch by school food policy.

Country	None	Specified amounts of F&V must be provided for each child	Specified number of times (red) meat served	Specified number of times other sources of protein served	Specified number of times dairy products served	Specified number of times (oily) fish should be served	(Deep)fried/processed products restricted	Sweet treats (chocolate, confectionery, etc.) restricted	Starchy food cooked in fat or oil restricted	Crisps and savoury snacks restricted	Fresh drinking water must be provided and easily accessible	Drinks limited to specific types (e.g. milk, fruit juice, water)	Soft-drinks (e.g. sugar-/artificially-sweetened soft drinks, squash) restricted	Salt provision is restricted
Austria		✓	✓		✓		✓	✓	✓	✓		✓	✓	✓
Belgium - Flanders		✓	✓	✓		✓	✓	✓			✓	✓	✓	
Belgium - Wallonia		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bulgaria		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Croatia		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cyprus	✓													
Czech Republic		✓	✓	✓	✓	✓								
Denmark		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	
Estonia		✓		✓			✓	✓	✓		✓		✓	
Finland		✓	✓		✓	✓		✓		✓	✓	✓	✓	✓
France		✓	✓		✓		✓	✓			✓	✓		✓
Germany		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Greece	✓													
Hungary		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ireland		✓		✓	✓			✓		✓	✓	✓	✓	
Italy		✓	✓	✓	✓	✓					✓			✓
Latvia		✓	✓	✓	✓	✓	✓	✓	✓			✓		✓
Lithuania		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Luxembourg							✓		✓			✓	✓	
Malta										✓	✓	✓	✓	✓

Table III.1 (cont.)

Country	None	Specified amounts of F&V must be provided for each child	Specified number of times (red) meat served	Specified number of times other sources of protein served	Specified number of times dairy products served	Specified number of times (oily) fish should be served	(Deep)fried/processed products restricted	Sweet treats (chocolate, confectionery, etc.) restricted	Starchy food cooked in fat or oil restricted	Crisps and savoury snacks restricted	Fresh drinking water must be provided and easily accessible	Drinks limited to specific types (e.g. milk, fruit juice, water)	Soft-drinks (e.g. sugar-/artificially-sweetened soft drinks, squash) restricted	Salt provision is restricted
Netherlands							✓				✓	✓		
Norway		✓						✓		✓	✓	✓	✓	
Poland	✓													
Portugal		✓					✓				✓	✓	✓	✓
Romania											✓	✓	✓	✓
Slovakia		✓	✓			✓					✓	✓		
Slovenia		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spain		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sweden		✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓
Switzerland		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UK-England		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UK-Scotland		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UK-Wales		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UK-Northern Ireland		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table III.2. Food-based standards for mealtimes other than lunch by school food policy.

Country	None	Specified amounts of F&V must be provided for each child	Restrictions on availability of fried or processed (potato) products	Sweet treats (chocolate, confectionery, cakes, biscuits, etc.) restricted	Starchy food cooked in fat or oil restricted	Crisps and savoury snacks restricted	Fresh drinking water must be provided and be easily accessible	Drinks limited to specific types (e.g. milk, fruit juice, water)	Soft-drinks (e.g. sugar-/artificially-sweetened soft drinks, squash) restricted	Salt provision restricted
Austria		✓	✓	✓	✓	✓		✓		✓
Belgium - Flanders		✓	✓	✓			✓	✓		
Belgium - Wallonia			✓	✓	✓	✓	✓	✓	✓	
Bulgaria		✓	✓	✓	✓	✓	✓	✓	✓	✓
Croatia		✓	✓	✓	✓	✓	✓	✓	✓	✓
Cyprus			✓	✓		✓		✓		✓
Czech Republic		✓								
Denmark		✓	✓	✓	✓	✓	✓	✓	✓	
Estonia	✓									
Finland		✓		✓		✓	✓	✓	✓	✓
France		✓	✓	✓			✓			✓
Germany		✓	✓	✓	✓	✓	✓	✓	✓	✓
Greece			✓	✓	✓	✓		✓	✓	✓
Hungary		✓	✓	✓	✓	✓	✓	✓	✓	✓
Ireland		✓		✓		✓	✓	✓	✓	
Italy		✓								
Latvia				✓		✓		✓	✓	✓
Lithuania		✓	✓	✓	✓	✓	✓	✓	✓	✓
Luxembourg			✓		✓			✓	✓	
Malta						✓				
Netherlands			✓				✓	✓		
Norway		✓		✓		✓	✓	✓	✓	
Poland	✓									
Portugal			✓	✓	✓	✓		✓	✓	
Romania		✓	✓	✓	✓	✓	✓	✓	✓	✓

Table III.2 (cont.)

Country	None	Specified amounts of F&V must be provided for each child	Restrictions on availability of fried or processed (potato) products	Sweet treats (chocolate, confectionery, cakes, biscuits, etc.) restricted	Starchy food cooked in fat or oil restricted	Crisps and savoury snacks restricted	Fresh drinking water must be provided and be easily accessible	Drinks limited to specific types (e.g. milk, fruit juice, water)	Soft-drinks (e.g. sugar-/artificially-sweetened soft drinks, squash) restricted	Salt provision restricted
Slovakia				✓			✓	✓		
Slovenia		✓	✓	✓	✓	✓	✓	✓		✓
Spain		✓		✓		✓	✓	✓	✓	✓
Sweden		✓		✓		✓	✓	✓	✓	
Switzerland		✓	✓	✓	✓	✓	✓	✓	✓	✓
UK-England		✓	✓	✓	✓	✓	✓	✓	✓	✓
UK-Scotland		✓	✓	✓	✓	✓	✓	✓	✓	✓
UK-Wales		✓	✓	✓	✓	✓	✓	✓	✓	✓
UK-Northern Ireland		✓	✓	✓	✓	✓	✓	✓	✓	

Table III.3. *Nutrient-based standards for lunch by school food policy.*

Country	None	Energy	Fat	SFA	Total CHO	NMES	Fibre	Protein	Fe	Zn	Ca	Vit A	Vit C	Folate	Na
Austria	✓														
Belgium - Flanders	✓														
Belgium - Wallonia		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bulgaria		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Croatia		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cyprus	✓														
Czech Republic		✓	✓			✓							✓		
Denmark		✓	✓	✓	✓		✓	✓							
Estonia		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Finland		✓	✓	✓	✓		✓	✓	✓		✓		✓		✓
France	✓														
Germany		✓	✓		✓		✓	✓	✓		✓		✓	✓	
Greece	✓														
Hungary		✓	✓			✓					✓				
Ireland	✓														
Italy		✓	✓	✓	✓		✓	✓	✓		✓				
Latvia		✓	✓		✓	✓		✓							✓
Lithuania		✓	✓		✓			✓	✓	✓	✓	✓	✓	✓	
Luxembourg	✓														
Malta	✓														
Netherlands		✓													
Norway	✓														
Poland		✓	✓			✓									
Portugal	✓														
Romania	✓														
Slovakia		✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Slovenia		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spain		✓													
Sweden		✓	✓	✓	✓		✓	✓	✓				✓	✓	✓
Switzerland		✓	✓		✓		✓	✓	✓		✓		✓	✓	✓
UK-England		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

CHO = carbohydrates; NMES = non-milk extrinsic sugars; SFA = saturated fatty acids; Vit = Vitamin

Table III.3 (cont.)

Country	None	Energy	Fat	SFA	Total CHO	NMES	Fibre	Protein	Fe	Zn	Ca	Vit A	Vit C	Folate	Na
UK-Scotland		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UK-Wales		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
UK-Northern Ireland	✓														

CHO = carbohydrates; NMES = non-milk extrinsic sugars; SFA = saturated fatty acids; Vit = Vitamin

Table III.4. *Nutrient-based standards for mealtimes other than lunch by school food policy.*

Country	None	Energy	Fat	SFA	Total CHO	NMES	Fibre	Protein	Fe	Zn	Ca	Vit A	Vit C	Folate	Na
Austria	✓														
Belgium - Flanders	✓														
Belgium - Wallonia		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bulgaria		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Croatia		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cyprus						✓	✓								
Czech Republic		✓	✓			✓							✓		
Denmark		✓		✓			✓								
Estonia		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Finland			✓		✓										
France	✓														
Germany	✓														
Greece			✓	✓		✓									✓
Hungary		✓	✓			✓					✓				
Ireland	✓														
Italy		✓													
Latvia	✓														
Lithuania		✓	✓		✓			✓	✓	✓	✓	✓	✓	✓	
Luxembourg	✓														
Malta	✓														
Netherlands	✓														
Norway	✓														
Poland		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Portugal	✓														
Romania		✓	✓	✓	✓										✓
Slovakia		✓	✓			✓		✓					✓		
Slovenia		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spain		✓	✓	✓		✓									✓
Sweden		✓													
Switzerland		✓	✓		✓		✓	✓	✓		✓		✓	✓	✓
UK-England	✓														

CHO = carbohydrates; NMES = non-milk extrinsic sugars; SFA = saturated fatty acids; Vit = Vitamin

Table III.4 (cont.)

Country	None	Energy	Fat	SFA	Total CHO	NMES	Fibre	Protein	Fe	Zn	Ca	Vit A	Vit C	Folate	Na
UK-Scotland	✓														
UK-Wales	✓														
UK-Northern Ireland	✓														

CHO = carbohydrates; NMES = non-milk extrinsic sugars; SFA = saturated fatty acids; Vit = Vitamin

ANNEX IV: Hyperlinks to school food policy documents by country

Country	Year	Link
Austria	2011	http://bmg.gv.at/cms/home/attachments/6/4/0/CH1047/CMS1313558884746/leitlinie_schulbuffet_final_201108121.pdf
Belgium - Flanders	2008	http://ond.vlaanderen.be/voedselveiligheid/voedselkwaliteit/Gezond%20eten%20op%20school%20KBS%202008.pdf
Belgium - Wallonia	2006 2013	http://mangerbouger.be/IMG/pdf/planAttitudeSaine-2.pdf http://www.sante.cfwb.be/index.php?elD=tx_nawsecuredl&u=o&file=fileadmin/sites/dgs/upload/dgs_super_editor/dgs_editor/documents/thematiques/cardiovasculaire/cantines_cahier_des_charges_/121009-Cahier_special_des_charges.pdf&t=1397659975&hash=3d68a8be08cfcfe373755076fb5f9804b3b5d05
Bulgaria	2009, 2012	http://lex.bg/en/laws/ldoc/2135752009 http://www.mh.government.bg/Articles.aspx?lang=bg-BG&pageid=391&categoryid=1564
Croatia	2013	http://www.zdravlje.hr/content/download/11609/84157/file/Nacionalne_smjernice_za_prehranu_ucenika_u_osnovnim_skolama.pdf
Cyprus	2012	n/a
Czech Republic	2005	http://www.msmt.cz/uploads/soubory/sbo34_05.pdf
Denmark	2012	http://www.altomkost.dk/Anbefalinger/Skoler/forside.htm
Estonia	2008	https://www.riigiteataja.ee/akt/12912436
Finland	2008	http://www.ravitsemusneuvottelukunta.fi/attachments/vrn/kouluruokailu_2008_kevyt_swe_2.pdf
France	2011	http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000024614763
Germany	2011	http://www.bmelv.de/SharedDocs/Downloads/Ernaehrung/Kita-Schule/QualitaetsstandardsSchulverpflegung.pdf?__blob=publicationFile
Greece	2013	Υ1Υ/Γ.Π./οικ.81025/27-8-2013 Healthcare Order (ΦΕΚ 21355/τα.Β/29-8-2013) as amended by Υ1Υ/ΓΠ/οικ 96605/17-10-2013 (ΦΕΚ 2800/τα.Β/4-11-2013) Ministerial Decision
Hungary	2012, 2014	http://ec.europa.eu/enterprise/tris/pisa/app/search/index.cfm?fuseaction=getdraft&inum=1980472 http://jogszabalykereso.mhk.hu/cgi_bin/njt_doc.cgi?docid=154663.610156
Ireland	2003	http://www.fooddudes.ie/Primary_Schools_Food_Nutrition.pdf
Italy	2010	http://www.asplazio.it/asp_online/prev_for_doc/corsi_formazione_new/form_committenza/celiachia/normativa/linee-rist-scolastica-2010.pdf
Latvia	2012 (amended in 2013)	http://likumi.lv/doc.php?id=245300
Lithuania	2011	http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=411986&p_query=&p_tr2=2

Country	Year	Link
Luxembourg	2006	http://www.sante.public.lu/publications/rester-bonne-sante/activite-physique/plan-action-promotion-alimentation-saine-activite-physique/plan-action-promotion-alimentation-saine-activite-physique.pdf
Malta	2007, being revised in 2014	http://education.gov.mt/en/resources/Documents/Policy%20Documents/healthy%20eating%20lifestyle%20plan.pdf
Netherlands	2011, 2014	http://gezondeschoolkantine.voedingscentrum.nl http://www.rijksoverheid.nl/documenten-en-publicaties/notas/2011/05/25/landelijke-nota-gezondheidsbeleid.html
Norway	2003	http://helsedirektoratet.no/folkehelse/ernering/skole/Sider/retningslinjer-for-skole-maltidet.aspx
Poland	2008	http://www2.mz.gov.pl/wwwfiles/ma_struktura/docs/obiady_szkolne_16012012.pdf
Portugal	2013	http://www.dge.mec.pt/data/educacaosaude/alimentacao/orientacoes_ementas_e_refeitórios_escolares_circular_1_agosto_2_1_2_.pdf http://www.dgic.min-edu.pt/educacaosaude/data/educacaosaude/accaosocial-escolar/desdbufetes.pdf
Romania	2008	http://www.ms.ro/?pag=186
Slovakia	2009	http://www.zakonypreludi.sk/main/rulepdf.ashx?cc=zz&dd=2009-330
Slovenia	2013	http://www.uradni-list.si/1/content?id=111596
Spain	2010	http://www.naos.aesan.msssi.gob.es/naos/ficheros/escolar/Standards.pdf
Sweden	2013	http://www.slv.se/upload/dokument/mat/mat_skola/Good_school_meals.pdf
Switzerland	2012	http://www.blv.admin.ch/themen/04679/05055/index.html?lang=en&download=NH-zLpZeg7t,lnp6loNTUo42l2Z6ln1ad1lZn4Z2qZpnO2Yuq2Z6gpJCFfYJ2fWym162epYbgzc_JjKbNoKS6A-- http://www.goodpractice-gemeinschaftsgastronomie.ch/fileadmin/user_upload/downloads_de/D_QSTGGG_V2.1web_Feb13.pdf http://www.sge-ssn.ch/de/bildung-und-schule/ernaehrung-der-schule/
UK-England	2007, as amended 2008 and 2011	http://www.legislation.gov.uk/ukxi/2007/2359/pdfs/ukxi_20072359_en.pdf http://www.education.gov.uk/aboutdfe/advice/fo0197541/school-food https://www.gov.uk/government/publications/the-school-food-plan http://www.education.gov.uk/schools/pupilsupport/pastoralcare/a00202841/fsmcriteria
UK-Scotland	2014	http://www.scotland.gov.uk/Topics/Education/Schools/HLivi/schoolmeals
UK-Wales	2013	http://www.legislation.gov.uk/wsi/2013/1984/pdfs/wsi_20131984_mi.pdf
UK-Northern Ireland	2013	http://www.deni.gov.uk/healthy_food_for_healthy_outcomes_-_food_in_schools_policy_-_english_version.pdf

ANNEX V: Hyperlinks to pre-school food policy documents by country

Country	Year	Link/Reference
Austria	–	–
Belgium – Flanders	2008	http://ond.vlaanderen.be/voedselveiligheid/voedselkwaliteit/Gezond%25zoeten%2520op%2520school%2520KB%25202008.pdf
Belgium – Wallonia	2013	http://www.sante.cfwb.be/index.php?eID=tx_nawsecuredl&u=o&file=fileadmin/sites/dgs/upload/dgs_super_editor/dgs_editor/documents/thematiques/cardiovasculaire/cantines__cahier_des_charges_/121009-Cahier_special_des_charges.pdf&t=1397659975&hash=3d68a8be08cfcfe373755076fb5f9804b3b55d05
Bulgaria	2011	http://www.mh.government.bg/DownloadHandler.ashx?id=8917
Croatia	–	–
Cyprus	–	–
Czech Republic	2005	http://www.msmt.cz/uploads/soubory/sbo34_05.pdf
Denmark	2010	http://www.altomkost.dk/Anbefalinger/Daginstitutioner/Forside.htm
Estonia	2008	https://www.riigiteataja.ee/akt/12912436
Finland	2004 (under revision now)	http://www.ravitsemusneuvottelukunta.fi/attachments/vrn/lapsi.perhe.ruoka.pdf
France	2013	http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000025242002&dateTexte=&categorieLien=id
Germany	2011	http://www.bmelv.de/SharedDocs/Downloads/Ernaehrung/Kita-Schule/QualitaetsstandardsKindertageseinrichtungen.pdf?__blob=publicationFile
Greece	1988	Ministerial decision Γ2α/οικ.4108 (ΦΕΚ 546/τα.Β/2-8-1988) which includes the dietary regimen for nursery schools and kindergartens and Ministerial decision 16065/22-4-2002 (ΦΕΚ 497/τα.Β/2002)
Hungary	2012, 2014	http://ec.europa.eu/enterprise/tris/pisa/app/search/index.cfm?fuseaction=getdraft&inum=1980472 http://jogszabalykereso.mhk.hu/cgi_bin/njt_doc.cgi?docid=154663.610156
Ireland	2004	http://www.dohc.ie/publications/pdf/HPU_pre-school_guidelines.pdf?direct=1
Italy	2010	http://www.salute.gov.it/imgs/C_17_pubblicazioni_605_allegato.pdf
Latvia	2012 (amendments in 2013)	http://likumi.lv/doc.php?id=245300
Lithuania	2011	http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=411986&p_query=&p_tr2=2
Luxembourg	–	–
Malta	2007	https://www.education.gov.mt/MediaCenter/Docs/3_healthy%20eating.pdf
Netherlands	–	–

Country	Year	Link
Norway	2007	http://helsedirektoratet.no/folkehelse/emering/barnehage/Sider/rad-om-maltider.aspx
Poland	2011	http://www.mz.gov.pl/wwwfiles/ma_struktura/docs/polzdrow_jadlospis_20120522_zal2.pdf
Portugal	–	–
Romania	2008	http://www.ms.ro/?pag=186
Slovakia	2007	http://www.zakonypreludi.sk/zz/2007-527
Slovenia	2013	http://www.uradni-list.si/1/content?id=111596
Spain	–	–
Sweden	2007	http://www.slv.se/upload/dokument/mat/mat_skola/bra_mat_i_forskolan_livsmedelsverket.pdf
Switzerland	2012	http://www.blv.admin.ch/themen/04679/05055/index.html?lang=en http://www.goodpractice-gemeinschaftsgastronomie.ch/fileadmin/user_upload/downloads_de/D_QSTGGG_V2.1web_Feb13.pdf http://www.sge-ssn.ch/de/ich-und-du/essen-und-trinken/von-jung-bis-alt/kindheit/
UK-England	2007, as amended 2008 and 2011 (reference to nurseries, but not pre-school as such)	http://www.legislation.gov.uk/ukxi/2007/2359/pdfs/ukxi_20072359_en.pdf (voluntary food and drink guidelines are available to help Early Years providers and practitioners meet the nutritional needs of children aged one to five. They include practical support tools to help practitioners understand and use the guidelines: http://www.childrensfoodtrust.org.uk/pre-school/eat-better-start-better)
UK-Scotland	2014	http://www.healthscotland.com/documents/21130.aspx
UK-Wales	2009	http://wales.gov.uk/docs/phhs/publications/foodandhealth/090414guidelinesen.pdf
UK-Northern Ireland	2012	http://www.dhsspsni.gov.uk/early_years_standards_-_july_2012.pdf

Author contributions

SSgB devised the research methodology based on the SNIPE questionnaire, collected school food policy source documents, extracted the data for 21 policies, revised the questionnaire after the pilot trial, analysed the data, and wrote and revised the report with feedback from reviewers. TK helped collect school food policy source documents, prepared the data collection template in Ex-

cel, and extracted the data for 13 policies. JW helped collect school food policy source documents and provided feedback on the data collection template and the report. MN contributed the SNIPE questionnaire and reviewed the final report. SC supervised the data collection and analysis, and critically reviewed drafts of the report.

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Abstract

Background: With childhood obesity prevalence on the rise in many European countries, schools may serve as a protected environment for children to learn healthy diet and lifestyle habits. Policy makers, educators and researchers would benefit from a comprehensive overview of European school food policies.

Methods: We screened public databases, EU level reports, national ministerial websites and the scientific literature to collate official school food policies across Europe. Member States representatives checked that all appropriate documents (total of 34 policies) had been identified and referenced, and they reviewed and confirmed the extracted data.

Results: Mandatory standards are defined in 18 of the policies (53%), the remainder offering voluntary guidelines. Top three policy aims are to improve child nutrition (97%), teach healthy dietary/lifestyle habits (94%) and reduce/prevent obesity (88%). Variations mainly relate to the types of meals targeted (*e.g.* lunch, breakfast, snack, dinner); whether standards/recommendations are nutrient- and/or food-based; and if vending machines and the wider food environment (kiosks near schools, packed lunches from home, etc.) are considered.

Conclusion: We provide an up-to-date overview of European school food policies. The next step will be to assess the need and feasibility for developing best practice guidelines for school food policies in Europe, bearing in mind cultural and structural differences between countries.

JRC Mission

As the Commission's in-house science service, the Joint Research Centre's mission is to provide EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle.

Working in close cooperation with policy Directorates-General, the JRC addresses key societal challenges while stimulating innovation through developing new methods, tools and standards, and sharing its know-how with the Member States, the scientific community and international partners.

*Serving society
Stimulating innovation
Supporting legislation*

