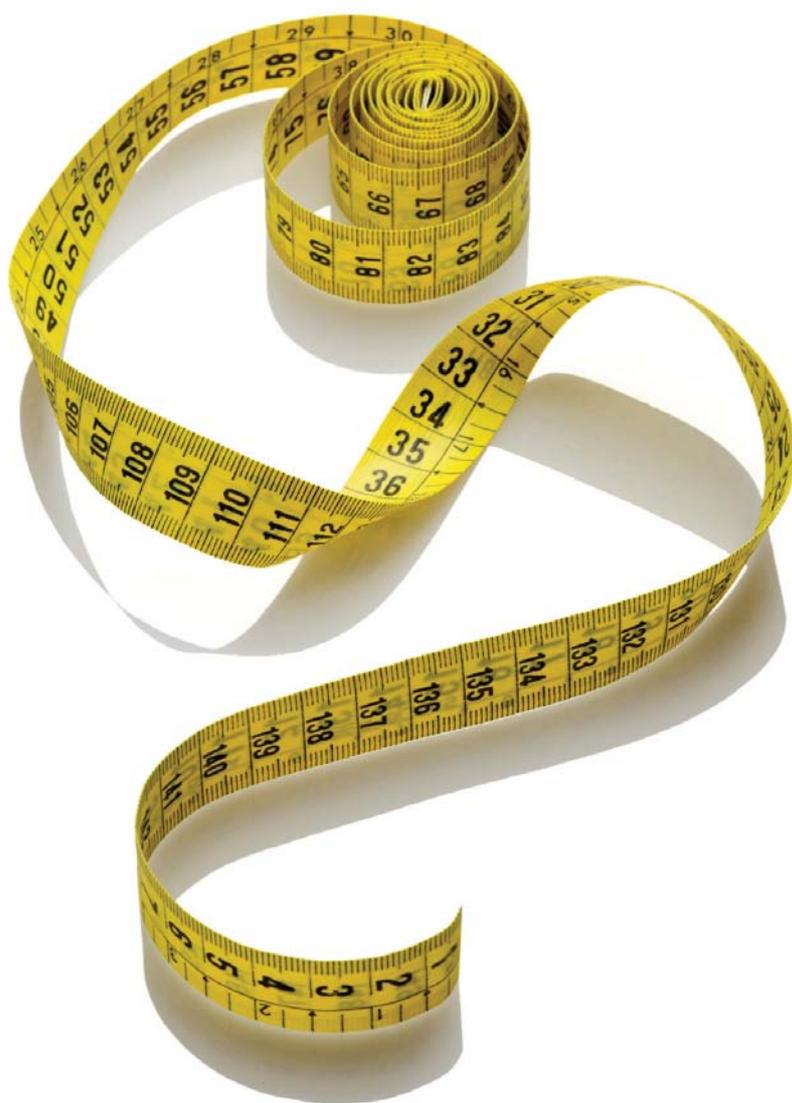




Policy options for responding to obesity: evaluating the options

Summary report of the EC-funded project to map the views of stakeholders involved in tackling obesity – the PorGrow project



University of Sussex

SPRU – Science & Technology Policy Research

NEST

NEW AND EMERGING SCIENCE AND TECHNOLOGY

Forewords

Drawing a map for policy-makers

The WHO has suggested that over 10 per cent of all deaths in some European populations are due to obesity, and governments are scrambling to tackle this growing problem. However, in the rush to combat the obesity epidemic and to promote a healthier population, there has been little consultation on the best methods for achieving the policy aims, although a wide range of different approaches can be seen around Europe.

This PORGROW project has compared policy options and stakeholder views around Europe. It was funded under the 'New and emerging science and technologies' (NEST) section of the EU's Sixth Framework Programme (FP6) under INSIGHT. This INSIGHT activity funded projects designed to investigate and evaluate phenomena which may indicate risks and potential problems for European Society. Their aim is to generate and consolidate scientific understanding, as well as to assist in formulating responses to address such problems.

The PorGrow project has performed its task admirably, bringing innovative techniques using software-based social science research and risk analysis to the problem of obesity and health policy development.

The results have helped to identify appropriate policies to limit the effects of obesity. Furthermore, the methods developed under PorGrow show that the approach can be used to tackle other complex, multi-factorial problems in the future. The mapping techniques may be applied to many other situations where factors are uncertain, thereby enabling policy-making to become more flexible, sensitive and effective.

Carlos Saraiva Martins
Project Officer of NEST
DG Research
European Commission

Building the base for action

Obesity is an intractable problem, causing suffering and a pre-disposition to other medical conditions for the individual, and medical and social costs to governments. The rise of obesity prevalence is an indicator of worsening population diets combined with falling levels of physical activity. More needs to be done to establish the optimal strategy for the prevention of obesity and overweight, and to identify effectiveness strategies for interventions in different settings, and at different societal levels.

The PorGrow project has helped to clarify how decisions on preventing obesity are made based on the judgements of a broad range of key stakeholders in a number of European member states including recent accession countries. An analysis of stakeholder views is an important complement to the available scientific evidence and the reports of specialists in the field of obesity treatment and prevention. Stakeholders include food producers, retailers and caterers, advertisers and the media, and they include teachers, public health professionals, environmental planners, advocacy groups and consumer organisations – and all these interested parties are an important part of the process for delivering better health.

The results of the PorGrow stakeholder analysis, along with the responses to the Commission's Green Paper *"Promoting healthy diets and physical activity: a European dimension for the prevention of overweight, obesity and chronic diseases"* will be a valuable resource in shaping proposals for action being prepared by the European Commission for 2007, and in the continuing development of EU food policy and legislation.

Michael Hübel
Head of Health Determinants
DG Sanco
European Commission

Policy options for responding to the growing challenge from obesity: a cross-national comparative study

SUMMARY OF FINDINGS

With obesity reaching epidemic proportions, Europe's policy-makers urgently need to know how to tackle obesity in an effective and acceptable fashion. The PorGrow project interviewed farmers and food manufacturers, retailers, caterers and advertisers, teachers, sports and physical activity organisations, public health experts, advocacy groups, consumer representatives and others, in each of nine EU member states: Cyprus, Finland, France, Greece, Hungary, Italy, Poland, Spain and the United Kingdom.

Interviews were conducted using Multi-Criteria Mapping (MCM), an innovative software-based tool developed at the University of Sussex, which provides structured, reproducible and transparent information on stakeholders' perceptions and judgements. The methodology has wide applicability to issues in social policy and risk appraisal. While most risk assessments restrict discussion in order to obtain clear answers, the MCM approach acknowledges variability of perspectives, interdependency and conditionality among options, and makes these explicit. The methodology does not provide a single answer to a complex question but it does allow many policy options to be considered at once, and in doing so highlights the key issues amid the complexity, and shows who thinks what and why.

The results reveal a broad consensus of opinion that a portfolio of measures will be needed to slow and then reverse the rising trend in the incidence of obesity, supported by a general acceptance that the costs of the various policy options are less important than their social and health benefits, efficacy, acceptability and practical feasibility. In particular:

- Educational options focussing both on school children and the general adult population were popular, but their effectiveness was seen as dependent on improved access to information including labelling and improved availability of healthier foods and opportunities for physical activity.
- Mandatory and improved nutrition labelling and controls on marketing terms were considered more feasible and socially acceptable than controls on advertising, but controls on advertising were considered as potentially more effective than other informational options in tackling obesity.
- There was widespread antipathy to fiscal interventions, such as taxes on 'unhealthy' foods or subsidies on 'healthy' ones. Controls on food composition were considered effective in tackling obesity, and were widely considered to be both feasible and acceptable.
- High levels of additional social and health benefits were anticipated from changes in transport and planning policies, but the costs to the public sector were considered high and the implementation difficult and long-term. Improved provision of and access to sports and physical recreational facilities were highly regarded under most criteria.
- 'Technological' solutions, such as increasing the use of artificial sweeteners and fat substitutes, the use of pedometers and the use of medication for weight control, were widely considered ineffective and unacceptable for tackling the obesity epidemic.
- Reform of the Common Agricultural Policy, from a health perspective, was considered socially desirable and acceptable but costly and difficult to implement.

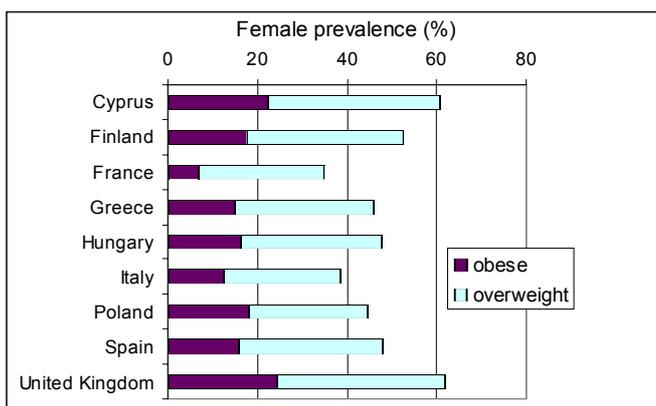
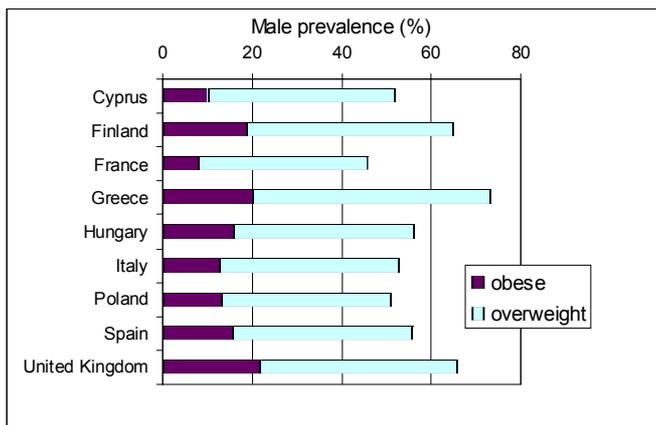
Policy-makers can be assured by the PorGrow findings that a comprehensive portfolio of policy measures, integrated into a coherent program, would be well-supported by broad coalitions of stakeholders, and that the costs of such a programme are not considered as important as the potential costs of not taking action. Policy makers can also be confident that many stakeholders see the need for 'upstream' interventions such as marketing controls and planning and transport controls, but the introduction of such measures may require justification in terms of their wider health and social benefits.

The size of the problem

Recent estimates have suggested that more than 50% of adults in many EU Member States are now overweight or frankly obese. Among the countries participating in the PorGrow study, approximately 56% of adult men and 49% of adult women are estimated to be overweight (BMI=25). On average, 17% of adults of both genders are obese.

Half of adults are overweight

As illustrated in the graphs below, the prevalence of overweight and obesity in the nine PorGrow participating member states has been estimated to exceed 50%.



Sources: WHO Global Infobase estimates for 2005, Attica study 2004.

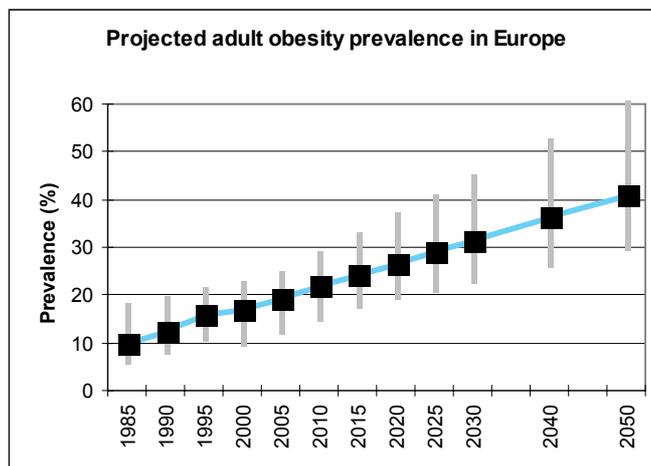
Paucity of data

There has been no EU-wide survey of adult or child obesity prevalence levels. Estimates of the prevalence of obesity and overweight are based on surveys of national and sub-national samples collected by a range of institutions as part of government and research institute public health activities. These surveys differ in year of collection, method of collection, type of data (e.g. self-reported or professionally measured heights and weights), age ranges and sample sizes.

There is a clear need for standardised data for surveillance and monitoring purposes. Meanwhile, comparable estimates of adult overweight and obesity prevalence have been made by the World Health Organization and those figures are shown here.

Estimates for the changing trend within the present decade show a rise in the prevalence of obesity in all parts of Europe. World Health Organization estimates for 2010, compared with the figures for 2002, forecast a rise in adult obesity prevalence by several percentage points in just eight years.

Upward trends in all regions: Adult obesity prevalence in Europe may double between 2000 and 2030.



Vertical lines reflect upper and lower estimates of the range, based on projections from data gathered in EU sample surveys 1980-2000. Source: International Obesity TaskForce (IOTF) 2006.

The prevalence of overweight and obesity tends to increase through adulthood with highest levels among adults in their 50s and 60s. In several EU member states more than 70% of the population aged 50-70 years are overweight or obese. Gender differences are not uniform across all populations. In some minority ethnic groups, obesity is significantly more common among women than among men (e.g. Pakistani, Indian and Black Caribbean groups in the UK).

There appears to be a tendency for members of minority ethnic groups to have higher levels of obesity, especially after several generations of residence in European countries. These trends may in part be due to socio-economic differences, including greater exposure to environments conducive to weight gain, but may also reflect culturally-specific health-related behaviour patterns.

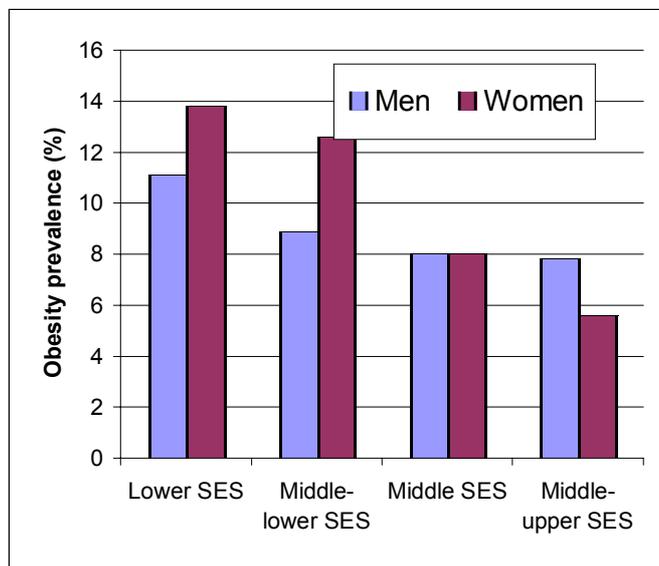
Data from some 80,000 adults in the WHO MONICA project covering 26 population groups found lower educational attainment linked to higher BMIs in only about half of the population groups with respect to men, but in virtually all the groups with respect to women.¹ The trends over time suggest that those differentials are increasing.

Comparisons of developed and developing economies show that as national wealth increases so the risk of obesity among low income groups rises, while that among high income groups tends to fall. Generally, as national average incomes rise so the overall level of obesity tends to increase, but within developed economies both obesity and diabetes are more closely linked to inequalities in the spread of wealth within a country than to the average level of income. This implies that the links between socio-economic status and obesity in developed economies may be mediated by the degree of relative inequality.

Perceived social status and self-esteem may influence health behaviour, and obesity prevention and treatment may be less successful among lower-income groups than amongst those with higher incomes.

Links between inequality and obesity need to be interpreted with caution, as obesity may itself lead to lower educational attainment, lower employment status and reduced income.

Prevalence of obesity by economic status, EU



Source: adapted from Martinez et al. *Pub H Nutr* 1999;2:125-33
Economic status measured by household income or by occupation. Self-reported heights and weights.

High costs of adult obesity

The costs of obesity can be measured in terms of the burden of ill-health associated with obesity, the financial costs to the health services and the loss of national economic productivity.

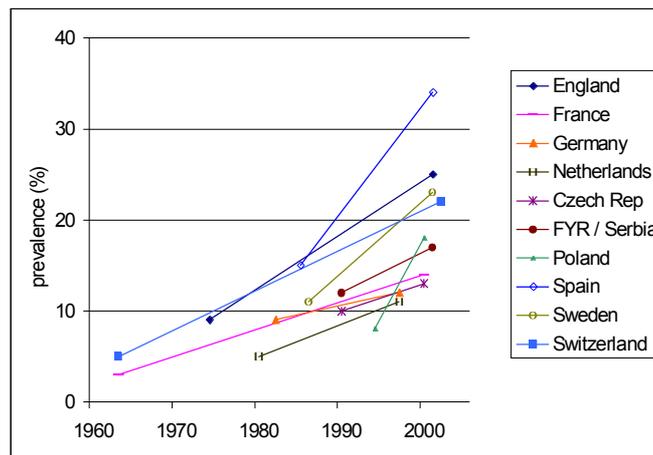
Obesity raises the risks of many chronic diseases including cardiovascular disease, certain cancers, osteoporosis, diabetes and liver disease. For young adults, the risk of an earlier death for someone with a BMI of 30 is about 50 per cent higher than that for someone with a BMI in the range 20 to 25. The UK National Audit Office estimated that 7% of all deaths in England were attributable to obesity in 2002 (compared to about 10% due to smoking, and fewer than 1% from road accidents).²

Obesity accounts for approximately 4% of health service costs in some EU member states, and causes the loss of over 1% of a country's total working days. These estimates exclude the costs of ill-health among people who are overweight but not obese, or the costs of obesity in childhood. Nor do they include the hidden costs caused by the psychosocial problems linked to being obese.

Children: rapid rise in overweight

Overweight and obesity among children is widely regarded as being even more serious than it is among adults, with a very rapid rise in prevalence in the last two decades. Child obesity is likely to continue into adulthood, and many of the problems linked to obesity are more severe if the obesity has been present for a long period. Adults with the highest risk of diabetes, cardiovascular disorders, liver malfunction and orthopaedic dysfunction, are likely to have the most extreme levels of obesity and to have been obese since childhood.

Increase of overweight European schoolchildren



Source: IOTF collated data .

Projections of child obesity based on trends from the 1980s and 1990s indicate that the annual increase in child obesity prevalence is itself increasing. By the year 2010, some 26 million schoolchildren in the EU are expected to be overweight, of which 6 million will be obese.³ The numbers of overweight children will rise by some 1.3 million per year, of which the numbers of obese children will rise by over 0.3 million per year.

Estimated and forecast prevalence of overweight and obesity among schoolchildren in the European Union (25 member states)

	2006	2010
Overweight or obese	30.4%	36.7%
of which obese	7.1%	8.8%

School-age children (5-17 years inclusive)

Source: Jackson-Leach & Lobstein, *IJPO*, 2006;1:26-32

On a conservative estimate, over a million obese children in the EU are likely to show a range of indicators for cardiovascular disease, including high blood pressure and raised blood cholesterol levels, and to have three or more indicators of the metabolic syndrome.⁴ Over 1.4 million obese children could have early stages of liver disorder.

The costs of childhood obesity have not been estimated, but should include lost educational opportunity. A study of children's quality of life found the psychological effects of severe obesity in childhood to be equivalent to a diagnosis of cancer.⁵

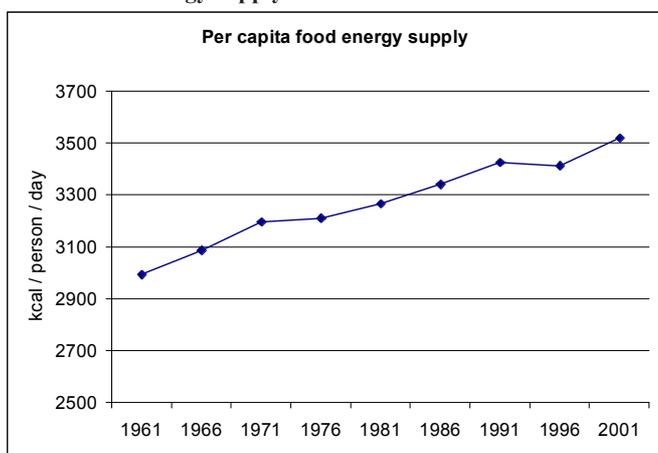
Drivers of obesity

The main biological cause of weight gain is an imbalance between energy intake (from food and drink) and energy expenditure (in metabolic and physical activity). An excess intake over expenditure is stored as body fat.

An average daily energy surplus of 100kcal can, for an adult with a BMI of 22 kg/m², lead to him or her becoming overweight in 2-3 years and obese in 6-8 years. Snack foods containing 100 kcal are easily found (a 330ml can of soft drink typically contains 120kcal, a 30g bag of potato snacks 150kcal, and a 50g portion of chocolate 250kcal).

Data on actual food and drink consumption are difficult to obtain from representative groups in the population and most surveys rely on individuals' reports of what they ate, which can be very unreliable. Studies of the supply of food from producers being sold to consumers over the last four decades show a gradual increase in food energy available per person.

EU food energy supply: 1961-2001



Source: FAO Food balance sheets.

Comparisons of more than 30 countries have shown that the rate of increase in the prevalence of obesity is correlated with increases in the per capita supply of food energy, with both of these linked to national economic growth.⁶

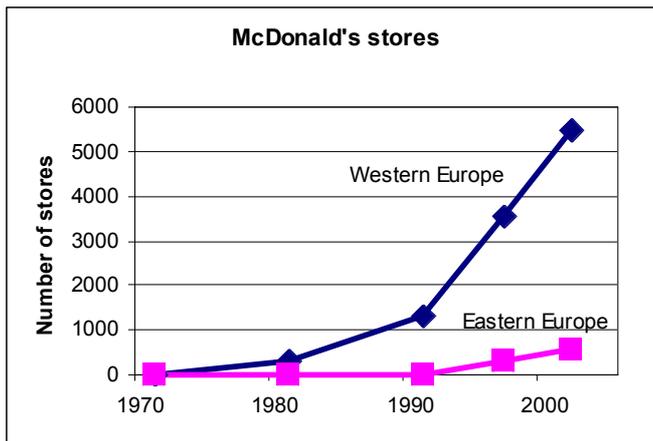
There is no single food source responsible for the increasing calorific intake over the last two decades: supply trends in the EU show an increase in total fat supplies, with a significant rise in fats and oils derived from vegetable sources (primarily seed oils) but with no corresponding fall in fats derived from animal sources (primarily carcass fat and dairy fats). Food supplies of sugar and of butter/milkfat remained little changed across the period, while supplies of raw and processed fruits and vegetables increased strongly.

Studies of domestic food purchases under the EU-funded DAFNE programme have shown a progressive narrowing of differences in the food choices of Northern and Southern European countries, although Southern Europeans still consume a significantly greater amount of olive oil and of pulses than Northern Europeans. The EPIC (European Prospective Investigation into Cancer and Nutrition) study of older adults found Greek and Italian participants ate relatively large amounts of plant foods and vegetable oils and less animal and processed foods compared with other countries studied. Participants in Northern European tended to consume larger amounts of animal-based foods, processed foods and sweetened foods.⁷

The EPIC study also found that food energy intakes, obtained from a self-reported dietary questionnaire, tended to

underestimate true intake levels, with 14% of women and 10% of men described as 'extreme under-reporters'. The majority of these under-reporters were found in adults with higher levels of BMI.

Foods eaten outside the home have not been studied directly in Europe. An indicator of changing trends can be seen in the numbers of fast food outlets opening in European member states in the last few decades. Figures for the leading chain of fast food stores, McDonald's, shows a dramatic rise in the number of stores in Western Europe since the 1970s, and a more recent increase in the number of stores in Eastern Europe since the early 1990s.



Source: Company reports.

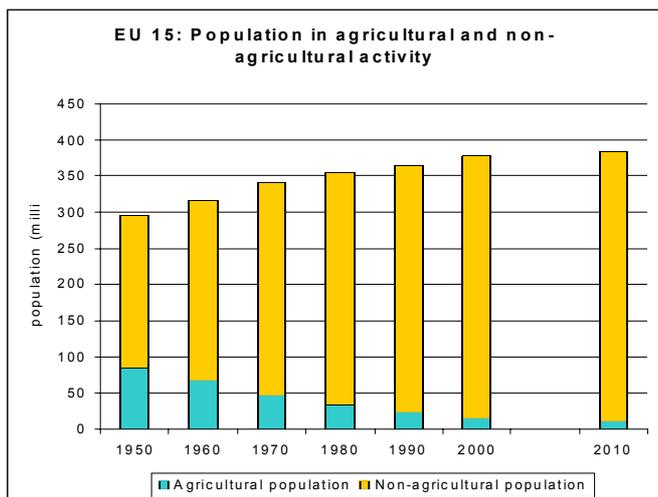
Children's diets

The only pan-European estimates of children's food consumption patterns are from self-reported surveys of health behaviour of children aged 11-15 years.⁸ The most recent (for 2001-2) found:

- In virtually all countries fewer than 50% of children ate vegetables every day. On average 30% of children said they ate vegetables daily, but the children in countries once famous for their Mediterranean diets reported lower than average levels, especially Spain, where vegetables were typically eaten daily by only 12% of children.
- In virtually all countries fewer than 50% of children ate fruit every day. On average, 30% of boys and 37% of girls reported eating fruit daily, but in sixteen countries only 25% of children were eating fruit more than once a week. Lowest levels of consumption were reported among children in Northern European countries.
- Soft drinks and confectionery were consumed daily by about 30% of children (over 40% in some countries).

Physical activity

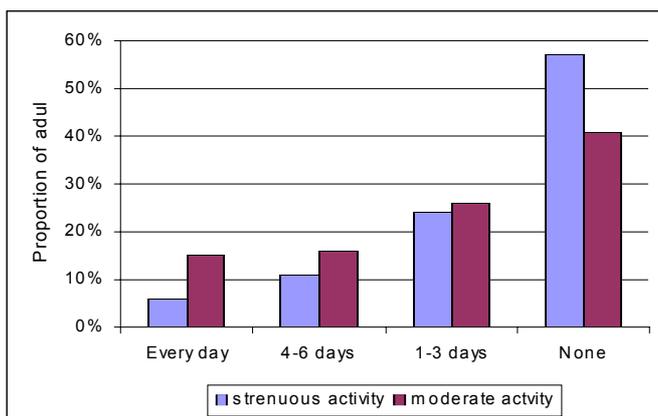
There are no reliable surveys of physical activity among European populations capable of showing trends, but trends in indicators such as car usage, TV watching and reductions of numbers employed in labour-intensive work all suggest a reduction in average energy expenditure by significant proportions of the population. For example, the proportion of the population engaged in agricultural production, one of the most active occupations, has fallen from nearly 30% of the workforce to barely 4% in the period from 1950 to 2000.



Source: United Nations FAO population estimates.

A Eurobarometer survey found that the majority of the population in Europe takes very little strenuous exercise on a regular basis, with barely one adult in ten undertaking moderate or strenuous activity on most days of the week. Over 50% of adults admit they take no strenuous activity and 40% take no moderate activity on a weekly basis.⁹

Self-reported weekly activity levels by adults in EU (15) countries



Source: Eurobarometer 2003.

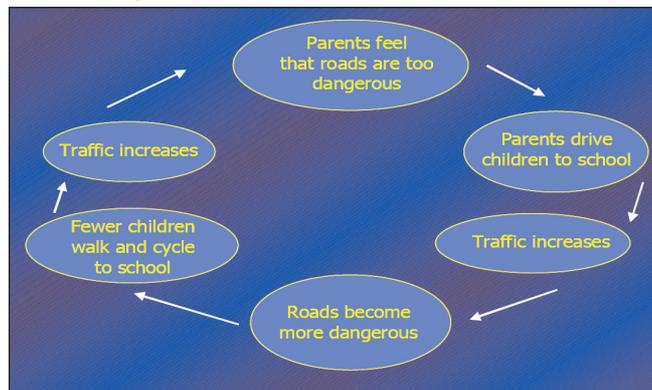
The Eurobarometer survey also asked respondents if they felt that their local environment offered them opportunities for physical activity. On average, only 20% disagreed, with a range from 17% (Finland) to 36% (Italy) among PorGrow countries, implying that significant proportions of the population believe they have sufficient facilities for exercise.

More than 30% of car trips in Europe cover distances of less than 3km, and 50% of less than 5km. The World Health

Organization points out that these distances can be covered by bicycle in 15-20 minutes or by brisk walking for 30-50 minutes, providing the recommended amount of daily physical activity.¹⁰

Cars are increasingly used to take children to and from school, partly due to parents' views that walking or cycling is dangerous, a self-fulfilling prophecy.

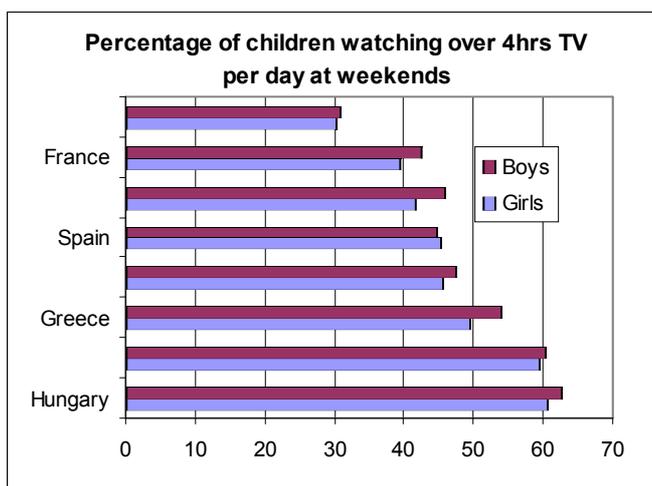
Self-fulfilling reasons for car use for children



Source: WHO Europe 2002.

The Health Behaviour of School Children survey of 2001-2002 found that approximately two-thirds of children were not achieving an hour of moderate activity per day, on five or more days a week. Boys (40%) were more likely to achieve the target than girls (27%) and the amount of physical activity declined between age 11 and age 15 years.⁸

The same survey also asked children about the time they spent watching television during the school week and at weekends. More than a third of children admitted watching over four hours of television per day at weekends, with the proportion rising to over half of all children in some countries.



Source: WHO Europe (HBSC) 2004.

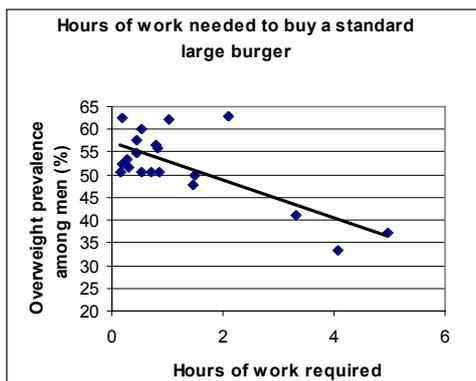
Physical activity has health benefits besides reducing the risk of obesity: for example, people who cycle to work regularly have a lower risk of chronic diseases compared to those who do not cycle. Thus policies promoting physical activity may have health benefits even if they have no impact on obesity levels.

Drivers of obesity

Obesity and economics

Economic growth has entailed greater consumption of industrial commodities, including processed foods, cars, television programmes, and less need for hard manual labour. In particular, the fall in the price of food relative to wages encouraged greater consumption, especially of processed foods such as soft drinks, confectionery, snacks and fast food. The figure below shows a higher proportion of adults are overweight where fast food is cheaper (measured by the price of a standard large burger valued in terms of local hourly wages).

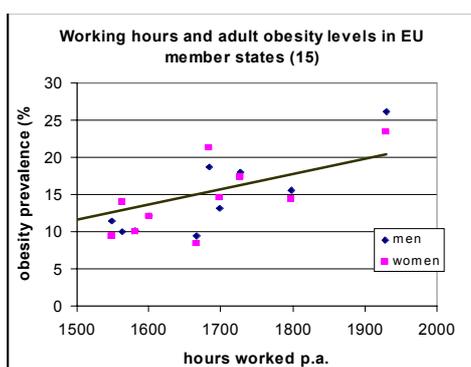
Overweight is linked to low cost fast food



Twenty European countries including former Soviet states
Source: IOTF 2006.

The second figure shows that countries with the longest average working hours have greater obesity levels, supporting the view that restricted leisure time increases the use of ready-prepared foods and fast food outlets and reduces the time available for physical exercise.

High obesity levels with long working hours



Source: IOTF 2006.

The importance of prices has been shown in US research on school vending machines comparing the consumption of healthier items and their price relative to standard products. A 50% price cut led to a 20% rise in purchases of low fat snacks. In contrast, health education messages had little effect on purchases. When the price cuts were removed the previous consumption patterns returned.¹¹

Policies to tackle obesity

This section considers the various measures being discussed and implemented at local, national and EU level to tackle the rising problem of obesity and related chronic disease.

Fifty years ago, Europe's food policies were devoted to establishing secure, adequate food supplies for the population following the severe shortages of the 2nd World War. The economic policies ensured growth of the agriculture and food processing industries and by the 1980s policies were needed to deal with over-supply in the European Union. Agricultural reforms were designed to support producers but did not consider their health effects. In the 1990s concerns turned towards food safety issues as well as diet-related disease and the costs associated with such diseases, including obesity.

The European Commission (EC) published a White Paper on food safety in 2000, followed by a review of Commission activities related to nutrition in 2003. In 2005, the newly-appointed EU Health Commissioner, Markos Kyprianou, said "I would like to see the industry not advertising directly to children any more," and added his challenge that the "food industry has been given a year to stop advertising junk food to children and improve product labelling or face possible legislation."¹²

Following this statement, the EC launched the Platform for Action on Diet, Physical Activity and Health, composed of various stakeholder groups, and also coordinated meetings of the European Network on Nutrition and Physical Activity, composed of experts on nutrition-related topics from various Member States.

The Platform has subsequently held a series of meetings in which participant organisations have made commitments to action, including monitoring, provision of information, support for local interventions, networking and research. The Platform has also created working groups to focus on 'healthy lifestyles, 'informing consumer behaviour' and 'monitoring' – the latter concerned with assessing the commitments being made by participants in the Platform.

More recently, the EC published a discussion document (Green Paper) entitled *Promoting healthy diets and physical activity: a European dimension for the prevention of overweight, obesity and chronic diseases*, raising issues directly related to obesity prevention policies, including:

- Information to consumers, related to food labels, for example, and consumer education, such as how to interpret food labels.
- The value of voluntary codes for limiting the advertising and marketing of energy-dense and micronutrient-poor foods.
- The relevance of institutional catering such as school meals services and workplace canteens.
- The role of commercial operators and other stakeholders in providing materials for consumer health education and for school-based health education.
- The role of physical activity in schools, and active transport to school and workplace.
- The role of health services and health professionals in promoting healthy diets and physical activity into health services.

National policies identified in the PorGrow project

- The measures needed to foster the development of environments that are conducive to physical activity.
- The measures needed to reach disadvantaged and minority population groups.

The Commission is due to publish comments on the Green Paper during 2006 and to present a draft Strategy document in early 2007.

A second arm of European governance, the Council of the European Union (reflecting the views of Member States' ministers) invited the EC in 2001 and 2002 to take food, diet and health policies and obesity prevention into account in its policy developments. Although the requests were initially limited to informational and educational activities, the Council has also considered the need to review cross-border telecommunication regulatory policies, the Common Agricultural Policy, social support measures and other cross-sectoral policies potentially affecting health.

The World Health Organization has also been at the forefront of policy development at regional and global levels. It has held expert advisory meetings, launched regional action plans for food and nutrition and a Global Strategy on Diet, Physical Activity and Health. In Europe the focus is now on a ministerial meeting to launch a Charter outlining options to tackle obesity. WHO's general approach includes:

- A need to consider policies in education, transport, social security, agriculture, media, finance etc.
- Health-promoting and nutrition-friendly school schemes, with a wide spectrum of school actions.
- Support for parents, especially at pre-school level.
- Reduction of environmental obesogens – easier cycling and walking, better access to healthier diets.
- Controls on marketing of unhealthy foods to children, and better nutrition labelling of foods.
- National policies to be supported at the global level.

European non-governmental organisations have similarly been active in proposing policies for tackling obesogenic environments and sponsoring stakeholder meetings to identify priority actions for preventing obesity in children. Both the European Association for the Study of Obesity and the European Child Obesity Group organise annual international conferences and expert meetings that make policy recommendations.

The European Heart Network has coordinated an EC-funded 14-country project involving stakeholder consultation on policies for child obesity (see page 19).

The individual country reports of the PorGrow project provide details of the policies being introduced at national and local levels to tackle obesity and related chronic diseases. Those policy debates and activities provided the context for the interviews conducted in the PorGrow project. Short summaries of the country contexts are given here.

Cyprus

Cyprus does not have a consolidated national plan but has introduced a series of measures that support obesity prevention. These include participation in the WHO-supported European Network of Health Promoting Schools, measures to promote healthier school meals, the promotion of fruits and vegetables at school, the promotion of traditional Mediterranean diets to the general population and specifically to farmers, and a national diet week.

Support measures include seminars for parents on child health and training for teachers in tackling obesity at classroom level. Sports organisations have opened several hundred sports centres focussing on children's needs. A child health monitoring programme providing detailed medical information on 10% of school children each year was run 1995-2003.

Finland

Public health policy to tackle chronic disease derived from the North Karelia programme of the 1970s and has benefited from coordinated policy development among Nordic countries. A major initiative to counter diabetes includes a strong emphasis on diet and physical activity and training of health care staff.

The National Nutrition Council coordinates policies across government sectors. National funds are helping the food industry reformulate products for the European market in healthier foods. Schools have nutritional standards (e.g. salads included in the price) and public health bodies advocate controls on marketing to children.

EU legislation on harmonised markets forced Finland to remove taxes on sugar, confectionery and butter, which had been imposed for health-promotion purposes. The EU has also imposed sales taxes on meals served in works canteens, which may have increased the consumption of snacks among adults.

France

Measures to restrict TV advertising and ban school vending machines were passed in 2004. The Senate also reviewed possible policies to counter child obesity, including fiscal measures to tax snacks or soft drinks and controls on marketing especially to children.

A move by the food industry to form a national foundation to finance nutrition education was rejected by state authorities, but other proposals were made to form a national body responsible for obesity policy.

A national programme for nutrition and health (PNNS1) 2001-2005 included a target of a 20% reduction in the number of overweight adults, and a halt to the increase in child obesity. A subsequent programme (PNNS2, 2006-2009) is aimed specifically at underprivileged members of the population, and at neighbourhood action to counter obesity.

Expert committees recommended a series of measures including subsidies for institutional catering, urban transport policies and improved surveillance and research. The National Food Council issued a report in March 2006 with 116 recommendations for countering child obesity.

National policies identified in the PorGrow project

Greece

Despite considerable media coverage of obesity issues, explicit strategies from health, education, sport or consumer authorities have yet to be announced. There are a number of initiatives and existing instruments which could serve as models for primary prevention strategies targeting obesity. For example, public health education programmes are underway and there are regulations specifying foods permitted to be sold in schools.

There is also some significant NGO activity, particularly by the Hellenic Medical Association for Obesity, with national and regional conferences on the treatment and prevention of obesity and its co-morbidities.

Hungary

The Hungarian National Sport Strategy includes an emphasis on physical education in schools and the development of local facilities.

School health promotion includes standards for physical education, personality development and regular health education. In 2006, the government introduced policies for improving school canteens and vending machines, following a wide-ranging expert consultation.

Food-based dietary guidelines encourage cereals, vegetables and fruits and discourage foods rich in fat or sugar. The obesity target is 'no further increase in prevalence levels'.

Italy

A recent health ministry strategy document on obesity prevention included improved school nutrition standards, healthier vending machines, breast-feeding promotion, more sports facilities and more cycle routes and footpaths.

Schools are to be circulated with health promotion materials. Farming organisations are proposing vending machines to be stocked with fruit. Local initiatives include Verona's 'Get citizens on the move' and a Piemonte Obesity Project linking family doctors.

Poland

Under the national diet, physical activity and health programme of 2005, several expert conferences met to develop obesity strategies, and measures to improve school food provision were launched. Four hours of physical activity per week are now required in schools and sugared drinks were removed from school premises by Coca-Cola.

There has been considerable investment in local facilities such as swimming pools, urban cycle paths and running routes. Warsaw is to be European Capital of Sports in 2008 for promoting healthy lifestyles.

Public service TV and specialist magazines provide regular information on avoiding obesity. Fat Men's clubs are run locally.

Spain

A major initiative was the launch of the NAOS anti-obesity strategy by the Ministry of Health, which ties food companies, local authorities and other stakeholders to voluntary agreements to improve diets and encourage greater exercise. Failure to reach targets may lead to public criticism. The targets are being monitored by a specially created agency (Obesity Observatory).

The NAOS strategy includes information campaigns, health education, school canteen and vending machine standards, food reformulation and portion control. An industry self-regulated marketing (PAOS Code) was also added to restrict marketing of unhealthy products to children.

UK

Policy documents have focussed on the costs of obesity, the need to provide treatment services, the need for evidence-based prevention policies, and individual responsibility for lifestyle choices.

A Parliamentary Select Committee in 2004 made a broad list of recommendations, and was followed by a government White Paper (Choosing Health) which proposed improved training for health workers, better health education in schools and curbs on marketing of foods to children.

A cross-departmental target of 'no further increase in child obesity' by 2010 has been agreed. The issue of marketing controls has been widely debated and is the subject of a regulatory review process. Most popular support is for a ban on marketing of 'junk' food on television before 9pm.

A television programme, Jamie's School Dinners, brought media attention to the necessity of improving the food which children have access to in schools. Scottish schools had already made improvements to school food standards before England did the same, with changes implemented from September 2006. School vending machine standards are also being introduced.

Local initiatives include the provision of freely-available fresh water in schools, permission to have water bottles in classroom, walking school 'buses', the promotion and construction of cycle paths and urban traffic congestion charging. Against this, there are pressures to reduce physical education opportunities in the school timetable, many schools have lost access to sports facilities, and children have few opportunities to learn cookery.

Evidence-based policy needs stakeholder support

Policy-makers concerned with the prevention of chronic disease, and especially the prevention of obesity, need clear evidence indicating what they could or should do. While the medical treatment of obese individuals can be evaluated using controlled trials, the prevention of diseases such as obesity in communities and larger population groups is not amenable to controlled trials except in limited circumstances.

The small amount of evidence concerning preventive interventions suffers a 'settings bias', since the most reliable data are based on interventions in controllable settings such as schools and clinics, where interventions can be manipulated and the effects properly monitored. Interventions such as restrictions on marketing, improved labelling, food taxation or re-designed urban environments do not have, and may never have, an evidence base comparable to surgical or pharmaceutical treatments or even school and clinic-set preventive interventions.

Systematic reviews of prevention strategies have found only a limited number of studies capable of showing successful obesity prevention, and these have generally shown that school, family and work-place interventions have only a modest impact on preventing weight gain. Generally, the more the intervention can change the environmental stimuli that promote weight gain – the environmental obesogens – the greater the likelihood of achieving change.

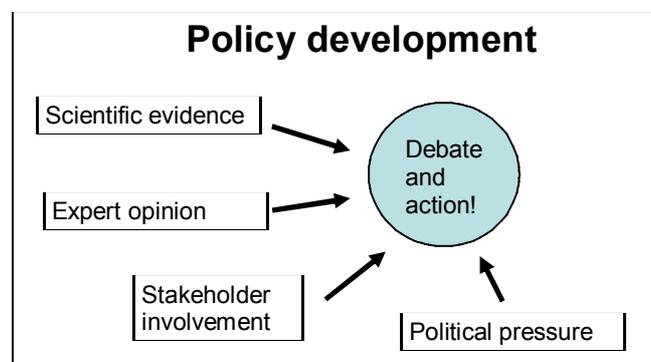
Even when clear scientific evidence is available, alternative and additional approaches to policy development are possible and desirable. One frequently used approach is to seek the recommendations of relevant experts who are able to consider the potential effects of a range of possible interventions.

A broader version of this approach is to seek the views of those with practical expertise of implementing obesity prevention policies, and those who may be active players in delivering them – the stakeholders or interested parties involved in the production of environments that might encourage obesity and in the implementation of prevention strategies.

Stakeholders may be well placed to identify factors leading to obesity and to consider 'upstream' factors that influence those factors – such as the price and availability of different foods or facilities for physical activity, the information available to consumers and their ability to use this information, and the perceptions of, for example, the safety of streets for outdoor play or the nutritional quality of different types of food. Those issues are not easily subjected to controlled scientific trials, but can be expected to have a significant effect on the applicability of policy proposals.

Key stakeholders include those perceived to be 'part of the problem' and 'part of the solution' and the latter set of stakeholders may include some of the former. Stakeholders are likely to be involved in implementing a prevention programme, and their participation and engagement may be essential to the success of such a programme. In the prevention of obesity, possible stakeholders include: members of the food production and marketing industries, caterers and retailers, designers of the built environment, transport and planning controllers, those involved in the provision and use of facilities for sports and physical activity, teachers and health workers, journalists, consumer and health promotion organisations, and relevant officials in various government departments.

Besides the need to seek the views of various stakeholders on what interventions might be introduced, there is also a need to assess how any interventions could be introduced and sustained, and this in turn raises questions about the sorts of problems envisaged when policy proposals are being put into practice. In these respects, the policy options and the terrain on which the policies will be implemented need to be mapped.



The mapping process has to consider a number of dimensions: what are the different types of options available, which stakeholders are most supportive of the different options and which are least supportive? What criteria and issues are being used by the different stakeholders to assess the options and influence their judgements? For example, are options being rejected because they are ineffective or politically unacceptable? Or is it because they increase social inequalities or even that they cost too much – either to the public sector or to private economic interests?

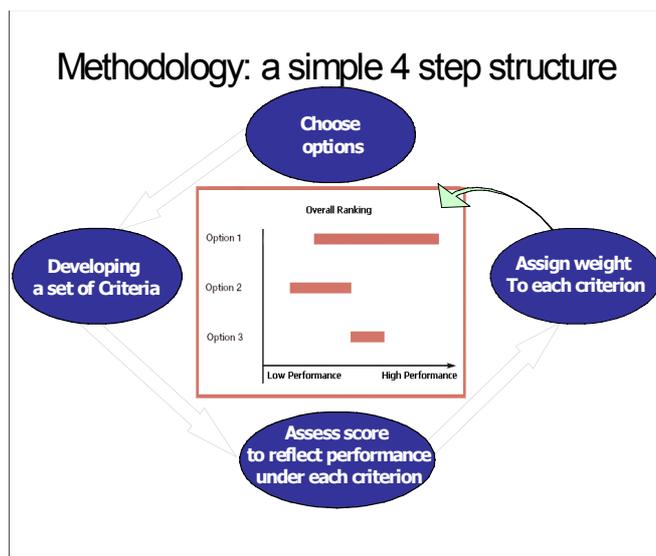
The mapping process can take various forms, but the methods employed should allow the appraisal process to be as reliable and transparent to outsiders and as fair and representative to the participants as possible. The PorGrow team made use of Multi-Criteria Mapping (see next section) which fulfils these functions and permits participants to express a wide range of opinions, articulating the values that underlie those opinions and the contexts in which they are set. The aim is to ensure that, at the end of the interview, stakeholders can see that their positions have been faithfully mapped, yet the method can provide sufficient clarity and consistency to inform the process of policy-making.

Multi-Criteria Mapping

Multi-criteria mapping (MCM) derives from the most prominent of a wide variety of 'decision support tools' developed in the field of decision analysis.¹³ It shares with other multi-criteria approaches a simple four-part structure:

- 1 characterising a wide range of relevant alternative ways to achieve a particular aim ('policy options'),
- 2 developing a set of 'criteria' to represent different values or underlying issues which participants use when appraising those options,
- 3 evaluating the options using each criterion in turn with numerical 'scores' to reflect the performance of each option under each criterion and
- 4 assigning a quantitative 'weighting' to each criterion, in order to reflect its relative importance.

The end product of these four steps is an overall performance rank for each option under all the criteria for a particular participant. Combined ranks can show how options are rated by groups of participants.



Unlike most other approaches, MCM focuses as much on 'opening up' as on 'closing down' a decision or policy process, generating a rich body of information concerning the reasons for differing viewpoints, as well as their practical implications for putting the options into practice. In this way, MCM spans the divide between narrow quantitative methods (which directly address decision priorities, but which may be insensitive to wider considerations) and broader qualitative approaches (which can accommodate more diverse perspectives, but can have difficulty focusing on the context of the decision). MCM provides this unusual combination because:

- (i) a set of diverse options are precisely defined in advance by the research team for purposes of comparison, with 'core' options that all participants appraise and 'discretionary' options that they may choose to appraise. Participants may also choose to redefine those options or add new ones;

- (ii) participants are free to choose and define their own criteria (rather than having these imposed upon them) without affecting the comparability of the final results (which are in terms of option 'performance');
- (iii) appraisal requires both optimistic and pessimistic scores, indicating 'uncertainties': i.e. the way in which scores may vary depending on the assumptions or on the interpretation of each option;
- (iv) a clear picture is given of option performance for each participant, while allowing for aggregation across groups of participants. In addition, there is a 'mapping' of the way that option performance varies across perspectives and under different criteria, rather than expecting a single consensus view.

Since its development in the late 1990s, MCM has been used in a variety of contexts, including the appraisal of options for energy strategy, agricultural production, environmental policy consultation and public health responses to the shortage of kidney donors. Forming part of a family of deliberative mapping processes, it has been recommended as a basis for high level government policy consultation.

Option selection

Possible policy options for tackling obesity were discussed and defined in advance by the research team. Twenty options were agreed, consisting of seven 'Core options', which all participants were asked to appraise, plus thirteen 'Discretionary options' which participants could appraise if they wished. The options were chosen to cover a range of fields, including modifying levels of physical activity, food supplies, the supply of information, the use of technological solutions and institutional reforms – the options are outlined below. Participants were also free to add their own 'additional options' to those being appraised. The 20 Core and Discretionary options were pre-loaded into the software used for the interviews.

Interview

The MCM interview was conducted at a convenient venue for the participant (usually their place of work) using a laptop computer loaded with a specialised MCM software package, called MC Mapper. Interviews typically lasted between two and three hours. In addition to the quantitative and textual documentation recorded using the software package, interviews were audio-recorded for later transcription and analysis.

Each interview proceeded through the four steps outlined earlier, with each participant first considering the set of options offered for appraisal, choosing which ones to appraise and adding extra ones if they wished. Participants then defined the criteria they would use to appraise the options and could also specify reasons for excluding certain options.

At the third step in the MCM process, participants assign numerical scores to represent option performance. It was possible to use any scale regarded as meaningful by the participant, the requirement simply being that higher values reflect higher performance and that the differences between scores reflects their performance (i.e. a difference of four indicates a performance twice as favourable as a difference of two). Usually, participants chose a scale of one to ten. Scores

were normalised and displayed as a chart for the participant to review.

An important, and unusual, feature of the MCM technique is that participants were asked to assign two performance scores to each option under each criterion. One score reflected the performance of an option under the most favourable assumptions and conditions. The other represented the performance under the most pessimistic assumptions and conditions.

In the fourth step, participants were asked to indicate the relative importance of each of their appraisal criteria by means of a simple numerical weighting. In contrast to the relatively technical business of scoring, this weighting process reflected subjective judgements concerning participants' priorities and values. The weightings, multiplied by the normalised performance scores, produce overall performance rankings for the appraised options. However, because interviewees provide 'best' and 'worst' performance scores, the rankings were expressed not as single numbers, but as ranges of values.

A final stage in the MCM interview involves the participant reviewing the final picture of option performance, as reflected in the overall ranking pattern across the appraised options. This picture is clearly displayed as a graphical chart on the computer. Participants were free to alter their weightings or scores in order to achieve a representation which they felt gave an accurate expression of their views.

MCM Analysis

The MCM interview software yielded data in the form of quantitative scores, uncertainties, weights and the associated final ranks, as well as transcripts of the interview and textual notes typed into the software package during the interview. The analysis of these quantitative and qualitative data then proceeded in parallel as an iterative, inductive process. It is a distinguishing feature of MCM that any subjectivity and conditionality of the researchers' judgements are rendered unusually transparent by the relatively open framing, the multiple finely specified parameters and the clear way in which sensitivities are displayed in representing the results.

In order to facilitate the analysis of these data, a separate specialist software package was developed as part of the PorGrow project, called MCM Analyst. This includes a relational database containing all data relating to all participants, interlinked with textual reports for representing in graphic and narrative forms relevant sections of the qualitative data.

Stakeholder selection

Policy-making takes place within networks of public and private actors, and an early task of the PorGrow project team was to identify likely stakeholders who were, could or should be participating in the relevant policy networks. Consultation of the relevant literature, discussions with potential participants and a series of debates within the research team narrowed down a very long list to the highest priority stakeholders which would be applicable across all nine member states involved in the PorGrow project. The resulting list of 21 types of participant is shown below.

21 stakeholder categories

1. Farming industry
2. Food processing companies
3. Large commercial catering chains
4. Large food retailers
5. Small 'health' food retailers
6. Public sector caterers (eg school meal providers)
7. Consumer groups
8. Senior policy makers in health ministry
9. Senior policy makers in finance ministry
10. Public health professional bodies
11. Town and transport planning bodies
12. Life insurance industry
13. Commercial sport or fitness providers
14. School teaching professions
15. Scientific nutrition/obesity advisory committees
16. Health journalism
17. Advertising industry
18. Pharmaceutical industry
19. Public health voluntary organisations
20. Sport and fitness voluntary organisations
21. Trades unions

Greece omitted category 6, public sector catering, since catering in all Greek public sector institutions is provided by private contractors.

Those categories of participants were combined into groups – hereafter called Perspectives – in order to facilitate the analysis. For the present report, the Perspectives used in the analysis are as follows:

Stakeholders grouped into 7 Perspectives

Perspective A. Public interest, non-governmental organisations (categories 7, 19, 20 and 21 above)

Perspective B. Large commercial operators in the food chain (categories 1, 2, 3, and 4 above)

Perspective C. Small food and fitness commercial operators (categories 5 and 13† above)

Perspective D. Large non-food commercial operators (categories 12, 13†, 17 and 18 above)

Perspective E. Policy-makers (categories 8 and 9 above)

Perspective F. Public providers (categories 6, 11 and 14 above)

Perspective G. Public health specialists (categories 10, 15 and 16 above)

† This category could be in Perspective C or D if the participant represented a small or large commercial operator respectively.

Pre-selected options for appraisal

The MCM methodology requires a set of policy options to be appraised by stakeholders in face-to-face interviews. Two sets of options were defined: 'Core options' which all stakeholder appraised, and 'Discretionary options' which participants could appraise if they wished to. Besides these, 'additional options' could be added by participants, and participants could also re-word the Discretionary options in place of the wording provided.

Potential options were taken from expert reports and policy proposals from the European Commission, the World Health Organisation, government agencies and non-governmental bodies representing industrial, commercial, consumer and public health interests. Since the PorGrow project was focussed on national and EU-wide public policy options, those policies that focussed solely on particular local communities or individuals were omitted.

The PorGrow research teams selected 20 options suitable to all national contexts, with seven Core and 13 Discretionary options. Core options were selected to reflect both the food and physical activity aspects of obesity, to include policies being considered in Member States or at EC level, and to utilise a range of different types of policy instrument.

Participants were given full descriptions of each option in local languages and their meanings were discussed in the interviews. These full descriptions are available in the national reports. A summary of the options presented to participants were as follows (in the order presented during the interview):

Core options

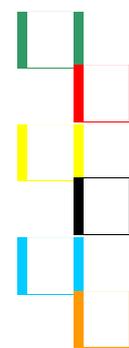
1. **Change planning and transport policies:** encourage physical activity through planning and transport.
2. **Improve communal sports facilities:** improve the provision of sports and recreational facilities in schools and communities.
3. **Controls on food and drink advertising:** restrict the advertising and promotion of foods and drinks.
4. **Control sales of foods in public institutions:** control access to fatty snacks, confectionery and sweet drinks in public institutions such as schools and hospitals.
5. **Mandatory nutritional information labelling:** Require enhanced nutritional labelling, for example using front-of-pack traffic light system.
6. **Subsidies on healthy foods:** provide subsidies on healthy foods to improve patterns of food intake.
7. **Taxes on obesity-promoting foods:** tax food and drink products to reduce the consumption of products that promote obesity.

Discretionary options

8. **Improve training for health professionals:** strengthen training for health professionals in obesity prevention, diagnosing and counselling.
9. **Common Agricultural Policy reform:** reform EU agricultural policy to help achieve nutritional targets
10. **Improved health education:** enhance public education to enable citizens to make healthier choices
11. **Controls on food composition:** restrict the nutritional composition of processed food products
12. **Incentives to improve food composition:** provide financial incentives to re-formulate food products.
13. **More obesity research:** Study the causes and effects of obesity, and why it is hard to lose weight.
14. **Provide healthier catering menus:** offer incentives to caterers to improve menu quality.
15. **School health and nutrition education:** enhance teaching food and health in the school curriculum.
16. **Medication for weight control:** increase the use of medication to control body weight.
17. **Substitutes for fat and sugar:** increase the use of synthetic fat substitutes and artificial sweeteners in food.
18. **New government body:** create a new institution to co-ordinate policies relevant to obesity.
19. **Control of marketing terms:** strengthen controls on the use of terms such as 'diet', 'light', 'lite'.
20. **Physical activity monitoring devices:** increase the use of pedometers or similar devices, with physical activity targets.

For analytical purposes, options were further classified into 'Clusters'. Clusters are colour-coded, with core options in solid colour and discretionary options in outline colour. See pages 14-17.

- Exercise and physical activity-oriented (options 1, 2 and 20)
- Modifying food supply and demand (options 4, 6, 7, 11, 12 and 14)
- Informational initiatives (options 3, 5 and 19)
- Education and research initiatives (options 8, 10, 13 and 15)
- Technological innovation (options 16 and 17)
- Institutional reforms (options 9 and 18)



Percentage of participant categories appraising the Discretionary options

Discretionary option	Cyprus	Finland	France	Greece	Hungary	Italy	Poland	Spain	UK	average
8 Training for professionals	38%	29%	52%	40%	52%	10%	33%	52%	90%	44%
9 CAP reform	19%	10%	19%	10%	19%	14%	0	33%	62%	21%
10 General health education	71%	67%	48%	85%	86%	14%	67%	86%	90%	68%
11 Food composition controls	48%	19%	19%	45%	43%	0	14%	24%	52%	29%
12 Reformulation incentives	24%	43%	24%	30%	43%	5%	0	29%	67%	29%
13 More obesity research	48%	14%	19%	20%	14%	10%	5%	52%	76%	29%
14 Healthier catering menus	19%	29%	29%	40%	76%	0	14%	57%	90%	39%
15 School health education	71%	52%	52%	95%	86%	48%	81%	71%	100%	73%
16 Weight control medication	10%	19%	5%	0	24%	0	0	10%	81%	17%
17 Fat and sugar substitutes	0	0	5%	5%	10%	0	0	25%	71%	13%
18 New government body	43%	24%	5%	15%	19%	0	0	29%	71%	23%
19 Control of marketing terms	38%	19%	10%	35%	33%	5%	29%	52%	71%	32%
20 PA monitoring devices	10%	14%	5%	15%	14%	0	5%	29%	81%	19%
<i>Average of Discretionary options</i>	<i>34%</i>	<i>26%</i>	<i>22%</i>	<i>33%</i>	<i>40%</i>	<i>8%</i>	<i>19%</i>	<i>42%</i>	<i>77%</i>	<i>34%</i>

Criteria used to evaluate options

Participants evaluated the policy options using criteria of their own choosing. One of the strengths of the Multi-Criteria Mapping technique is that it requires participants to choose their own criteria for judging the options. There is no requirement for a participant to accept or use particular approaches to judging policy options: in the appraisal process participants judge the various policies on their chosen basis.

Well-recognised criteria used in government are:

Effectiveness: likely to achieve the intended result

Utility: clear benefits to individuals or population groups

Proportionality: costs are acceptable for the gains

Equality: no increase in discrimination or disadvantage

Accountability: open to public scrutiny and challenge

Stakeholders from other perspectives will bring different criteria into the appraisal process, and these are specifically accommodated by the MCM methodology. The only restriction was that the criteria used by a participant should be applied across the full range of options which the participants appraised.

By allowing participants to choose their own appraisal criteria, the MCM procedure encourages inclusiveness – the participants recognise that their viewpoint is fully represented in the findings.

For analytical purposes, the main reports of PorGrow have grouped criteria into 'Issues' as follows

- I Positive societal benefits
- II Additional health benefits,
- III Efficacy in addressing obesity
- IV Economic costs to public sector
- V Economic costs to individuals
- VI Economic costs to commercial sector
- VII Economic costs – unspecified
- VIII Practical feasibility
- IX Social acceptability
- X Miscellaneous

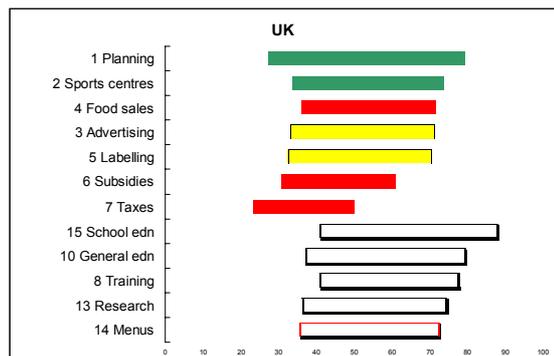
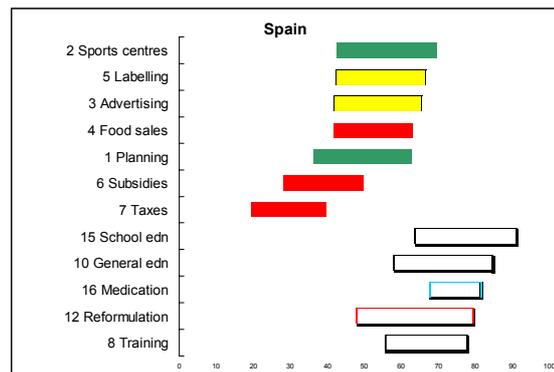
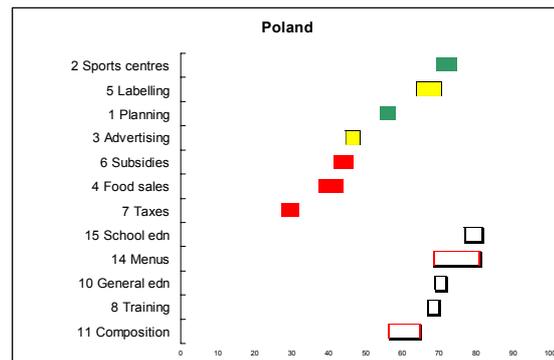
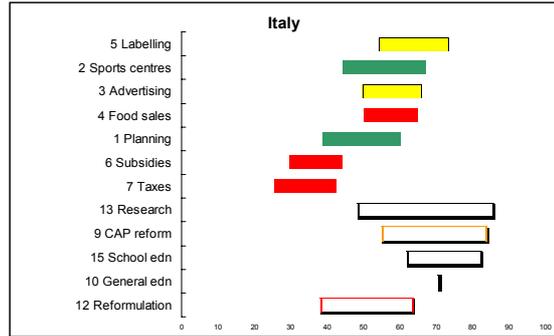
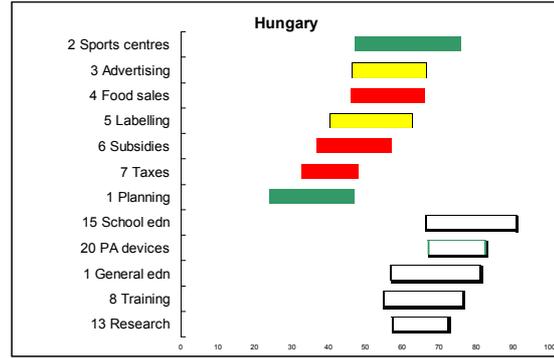
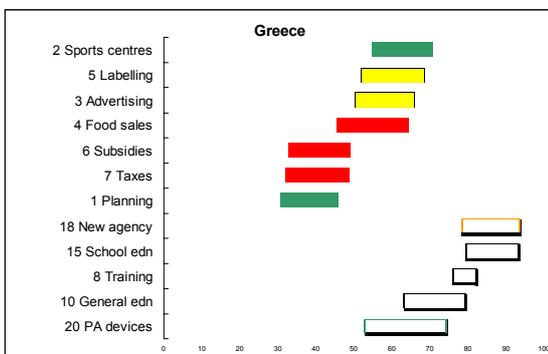
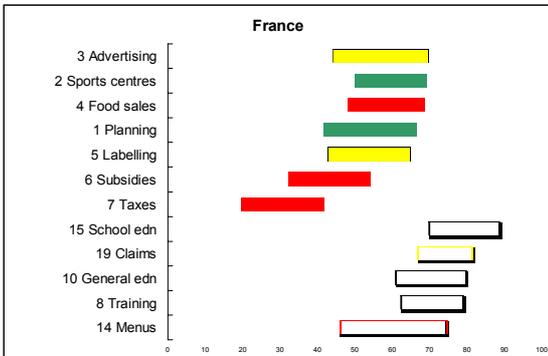
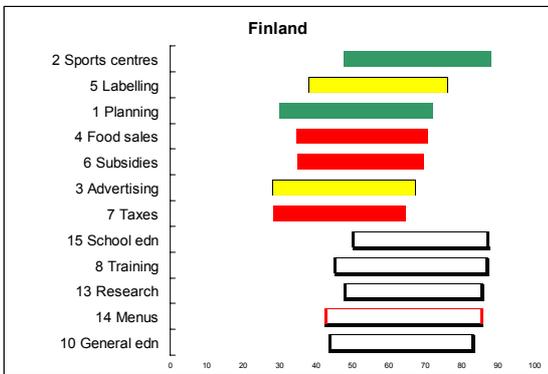
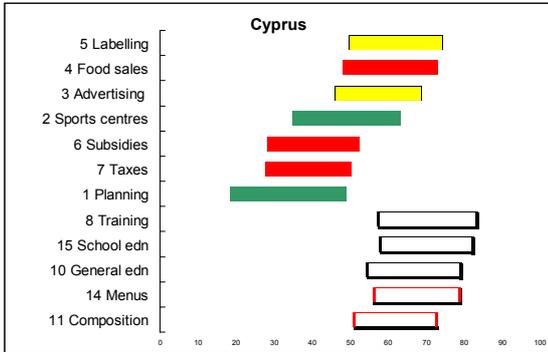
The table (right) indicates the wide range of criteria which participants introduced to the appraisal process. Examples are from the UK PorGrow programme, and are grouped under participant Perspectives.

Examples of criteria chosen by participants for policy appraisal (taken from the UK report)

A. Public interest, non-governmental organisations	B. Large food chain, commercial operators	C. Small commercial operators	D. Large non-food commercial operators	E. Policy-makers	F. Public providers	G. Public health specialists
Effectiveness	Cost effectiveness	Public health	Morbidity improvements	Long term health benefit	Credibility	Effectiveness/efficacy
Greatest impact on largest number of people	Equity	Cost effectiveness	Mortality improvements	Effectiveness	Cynicism	Reducing inequalities
Consumer acceptability	Impacts upon other spheres	Cost benefit	Cost to society	Impacts on local communities and economies	Understanding	Cost efficacy
Practicality	Effectiveness / Efficacy	Reduction in crime rate	Cost to insurance industry	Citizen engagement and accessibility	Citizen engagement and accessibility	Sustainability
Addresses health inequalities	Not draconian	Improvement in educational standards	Effectiveness of option on insured population	Economic costs and benefits to the UK as a whole	Effectiveness	Timescale
Partnership across local and national government	Egalitarian	Community values	Timescales: short term fix or long term change	Costs and benefits to government	Safety	Funding and resources
Social, cultural and economic benefits	Understandable and realistic	Efficacy	Consumer preference	Costs and benefits to tax payers	Cost and resource implications	Evidence base
Societal impact	Based on science	Impact on society	Feasibility	Costs and benefits to companies	Sustainability	Individual vs manufacturing industry
Public accessibility and acceptability	Ease of implementation	Impact on child health and positive lifestyle	Will it make people thin? Benefit/costs	Costs and benefits to companies	Cost	Health inequalities
Personal impact	Empowers individuals	Impact upon adult health and positive lifestyle	Individual rights	Cost effectiveness	Resistance among target group	Cultural acceptability
Cost-benefit	Facilitates cultural change	Immediate impact upon levels of obesity	Sustained impacts upon levels of obesity	Efficacy	Timescales	Quality of life
Safety	Feasibility	Sustained impacts upon levels of obesity	Public engagement		Consumer costs	Feasibility
Availability	Consumer awareness	Evidence based policy	Cost effectiveness		Political will	Consumer costs
Employment issues	Fiscal policy	Cost effectiveness			Focused action	Political will
Societal interactions	Accessibility				Social benefits	Focused action
Family support	Public health indices					Social benefits
	Regulatory controls					Social benefits

Results: Overall and country comparisons

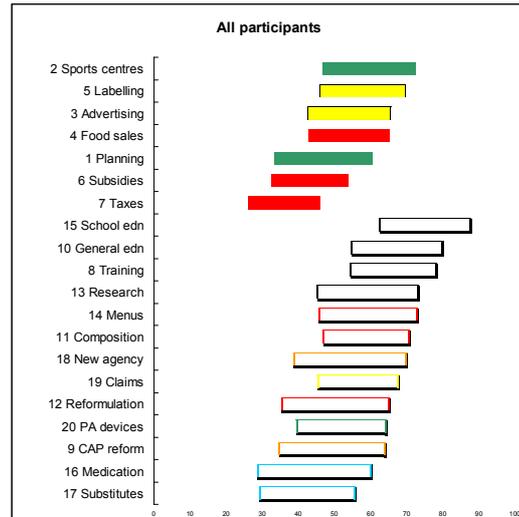
The figures on this page show for each country in the PorGrow programme the ranking of the seven Core options in descending order of preference, followed by the five highest-ranking Discretionary options.



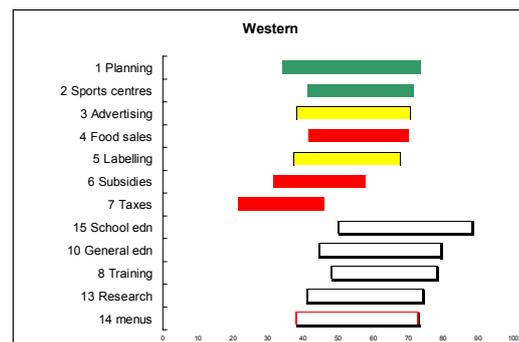
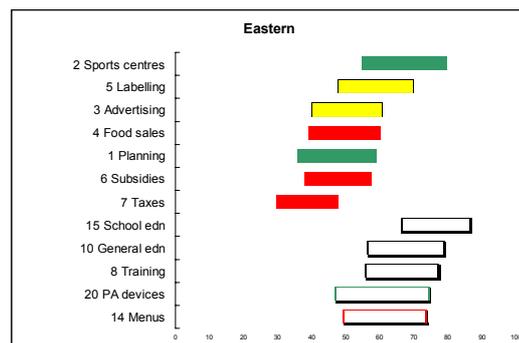
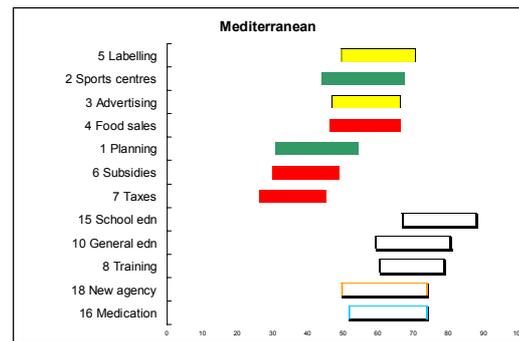
The figure on the right shows the option rankings, indicating the preferences expressed by all the participants in the PorGrow project combined. The seven Core options are ranked first, followed by the remaining Discretionary options. The figures on the opposite page show the results for participants grouped into nationalities. Core options are followed by the five highest-ranking Discretionary options. A description of the options is given on page 12.

Each option shows an upper and lower score (with a bar joining the two) reflecting averaged participants' optimistic and pessimistic appraisals. The bars are coloured according to the types of options (see page 12). The results show:

- Of the Core options, policies to improve the availability of, and access to, sports facilities, to improve nutritional labelling, to improve food sales in public institutions (e.g. school meals, vending machines) and to control advertising scored highly overall and in virtually all countries. Subsidies and taxes were generally very unpopular.
- Of the Discretionary options (which were not appraised by some participants) those proposing health education in schools and among the adult population were widely supported, as were other educational initiatives (more training, more research). Consistently low scores were given by almost all participants for the use of fat and sugar substitutes.
- The lengths of the bars give an indication of the 'uncertainty' in the scores for the options – i.e. the difference between the scores assuming optimistic conditions for the option, and the scores assuming pessimistic conditions. Participants in Poland and Greece expressed relatively low levels of uncertainty, while those in Finland and the UK high levels. The variation in Italy shows how overall ranking might change if the pessimistic scores had been used for ordering the options instead of the optimistic scores.
- The interviews showed that policy priorities and uncertainties were partly dependent on the national policy context (see pages 6-8). For example, France has led the way in Europe to restrict advertising of certain foods on TV, while the UK has a high level of traffic congestion and use of cars for short journeys, thus making planning for physical activity an important policy option. The UK has also had a major debate on sales of foods in schools.
- Analyses of the interviews also showed a degree of interdependency, in which the performance of one option depended on the application of another. This was especially clear with options to promote better health education which were seen as essential if other options – such as better nutritional labelling and improved sports facilities – were to be used by consumers. Not only was education seen as a necessary component of other policies, it was also seen as insufficient in itself: there was no point telling people what they should do if the means to put theory into practice were not available.

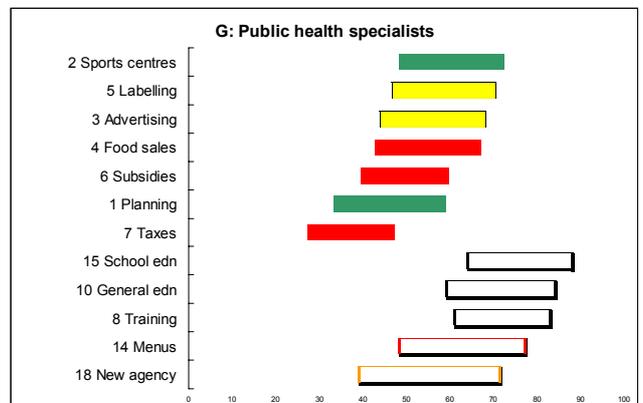
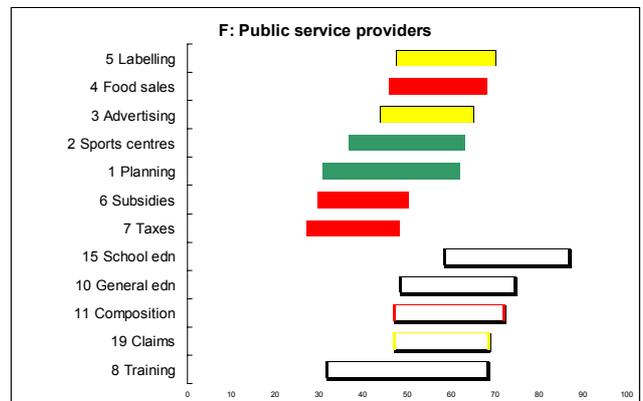
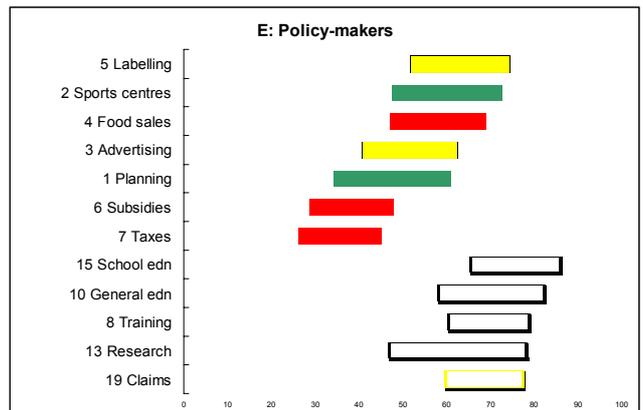
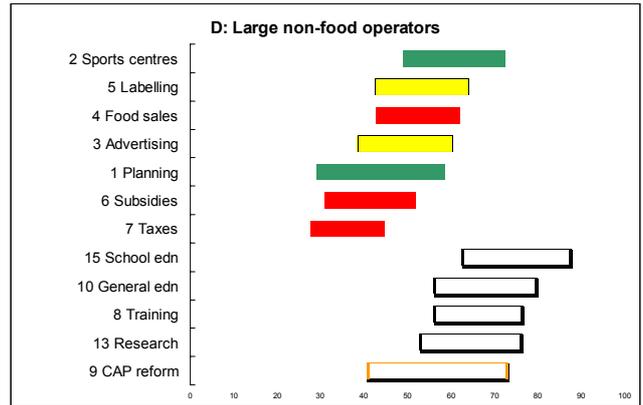
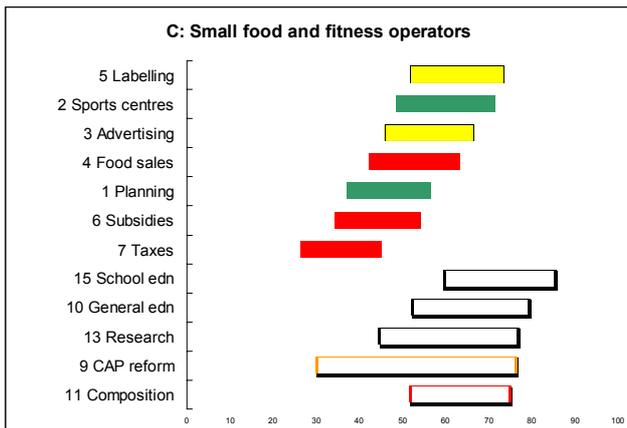
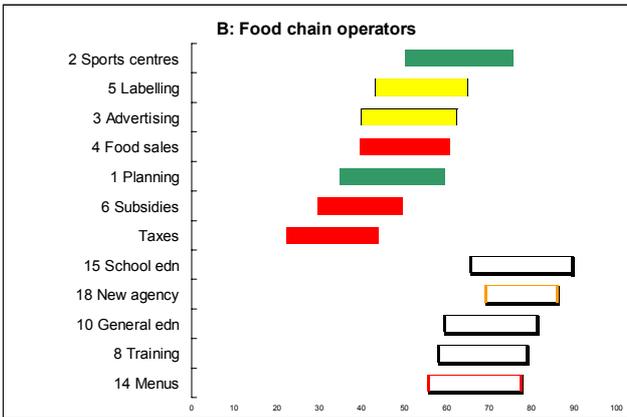
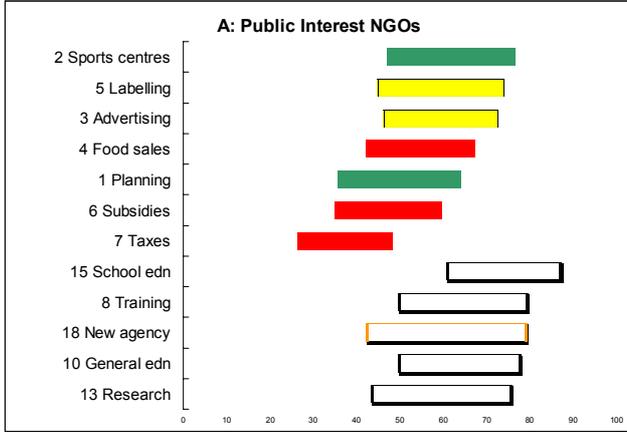


Regional differences are also apparent. The figures given below show the national results grouped into three European regions: Mediterranean (Spain, Italy, Greece, Cyprus), Eastern (Finland, Poland, Hungary) and Western (France, UK). Eastern countries were strong supporters of improving sports facilities and physical activity monitoring devices, while there was less concern about advertising.



Results: Stakeholder views

The figures on this page show the ranking of the seven Core options in descending order of preference, followed by the five highest-ranked Discretionary options for stakeholders grouped into the seven Perspectives identified on page 11.



The figures on the opposite page show the results for participants grouped into Perspectives (see page 11). Core options are followed by the five highest-ranking Discretionary options. A description of the options is given on page 12. Each option shows an upper and lower score (with a bar joining the two) reflecting the average of the participants' most optimistic and most pessimistic appraisals. The bars are coloured or according to the type of option (see page 12).

Considering the Core options, the improvement of sports facilities was ranked especially strongly by the food chain participants and by other non-food large commercial operators. For these participants, the sports option ranked as high as, or higher than, many of their top-ranking Discretionary options, whereas the other Core options, such as labelling, advertising or fiscal measures, ranked poorly compared with the Discretionary options.

In contrast, for the non-commercial participants, the Core options to improve labelling and to control advertising scored as highly as many of the top five Discretionary options, indicating strong support for those measures.

Although there was strong support for the educational options from all Perspectives, some also gave non-educational options a high ranking. The proposal to establish a new government body responsible for coordinating policies to tackle obesity ranked among the top five Discretionary options for participants from the public interest and public health Perspectives, and also from food chain operators. The proposals to reform the Common Agricultural Policy was supported by large non-food commercial operators and by smaller food and fitness companies – although both showed a wide gap between the high and low scores for this option, indicating considerable conditionality concerning the details of its implementation.

Both the public health specialists and the food chain commercial operators gave relatively strong support for incentives to improve catering menus, which some participants regarded as a means of tackling obesity in lower income groups through improved fast food services.

Among the other Discretionary options not ranking in the highest five, the technological options were scored relatively poorly by most Perspectives, but the option to offer medication for weight control was given relatively strong support by large non-food operators which included representatives of pharmaceutical companies and, perhaps surprisingly, by some public health specialists.

The option to use artificial substitutes for fats and sweeteners was supported by several members of the large non-food operators, but by few other participants.

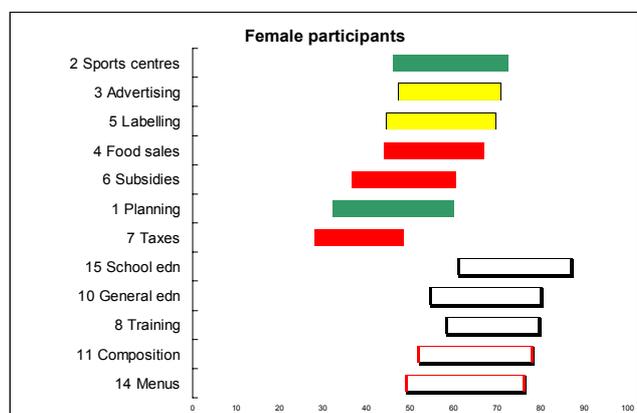
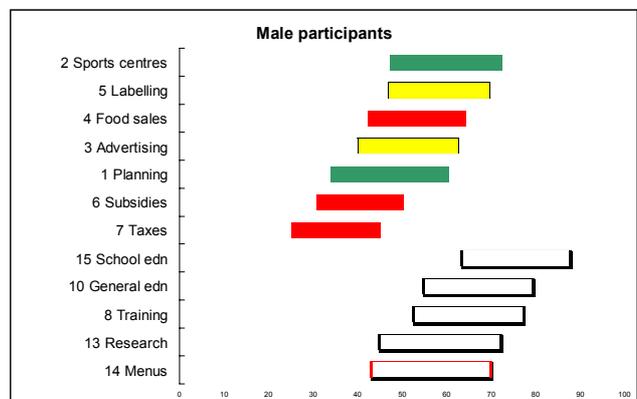
The option to increase the use of physical activity monitoring devices such as pedometers was fairly well supported by members of the food chain commercial operators, although most other participants believed the option was not an effective way to increase activity levels.

If the scores given for Discretionary options were to be directly comparable to those from Core options (note the discussion on this on page 19) then the following observations can be made:

- For all Perspectives, at least two educational options were among the five highest-ranking options overall. For two Perspectives (non-food operators and policy-makers) all four educational options were among the top five.

- Improving communal sports facilities was among the top five options for public interest and public health Perspectives.
- A new government body was in the top five for Perspectives public interest organisations and food chain operators while reform of the CAP was among the top five for smaller food & fitness companies and large non-food operators..
- Of the supply-side measures, controls on food composition featured among the top five for smaller food & fitness companies and public providers, while incentives for healthier catering were favoured by food chain operators and the public health specialists..
- Substitutes for fat and sugar as well as taxes on obesity promoting foods were rated among the lowest 5 options by all Perspectives.

Gender differences were also considered during analysis (although not when selecting interviewees). The figures below show participants grouped by gender (male = 126, female = 65). The results show strong similarity, although the option to control advertising was ranked significantly higher by women than by men. The various educational options were strongly supported by both genders, while taxation of obesity-promoting foods and drinks scored poorly for both genders. Comparisons should be treated cautiously as the genders were not distributed equally across stakeholder categories or participating countries.



Results: Appraising the controversial options

While there is a general consensus that educational initiatives are needed to promote healthy behaviour, there is generally less clear agreement on the degree to which institutions, especially regulatory bodies, should be involved in shaping the environment to make healthy behaviour more likely.

It can be seen from the results of the national and Perspectives' rankings on the previous pages that some groups of stakeholders ranked certain options poorly while others ranked them more favourably. On this page we consider in more detail a selection of the more controversial options and consider how these were appraised by stakeholders. In particular we identify those stakeholders who are most in favour or least in favour of these options, and for those least in favour we further look at the criteria they used when making the appraisals. Specifically we identify the conditions under which the opponents to a policy might be prepared to accept the introduction of those policies. The options selected are:

Planning: encourage physical activity through changes in planning and transport policies.

Advertising: restrict the advertising and promotion of foods and drinks.

Labelling: Require enhanced nutritional labelling, for example using front-of-pack traffic light system.

Subsidies: provide subsidies on healthy foods to improve patterns of food intake.

Taxes: tax food and drink products to reduce the consumption of foods which promote obesity.

CAP reform: reform the EU common agricultural policy to help achieve nutritional targets

The table below shows each of these options, along with the stakeholders (grouped as Perspectives – see page 11) who tended to score the option particularly well or particularly poorly. For those who scored the option poorly the table shows the criteria they used when being most positive about that option – i.e. the issues upon which opponents would accept that an option could have an advantage.

It can be seen from this tabulation that the less popular or more controversial options for policy-makers are likely to be opposed by some stakeholders (most commonly in the commercial sector), but that even those stakeholders accept some positive aspects to these options.

Thus the development of planning and transport policies may have achieved low appraisal scores for various reasons (e.g. very long term, requires expensive infrastructure) but the critics of this policy option saw advantages in terms of its potential for being generally popular, that it might be effective in helping tackle obesity, and that it also provided health benefits besides obesity reduction.

Similarly, those who felt that controls on advertising should be given a low score were nonetheless prepared to see that the option was generally popular, could provide extra health benefits and could provide a level playing field for the food industry (especially benefiting small and medium enterprises).

Improved nutritional labelling (such as a front-of-pack traffic light scheme) was often accepted as being popular and feasible, and as potentially effective in changing dietary patterns.

Subsidies and taxes were generally given low appraisal scores, but there were possible gains to be made in terms of social benefits (e.g. reduced inequalities, depending how the measures were applied), extra health benefits and economic gains for industry or for the government respectively.

The option to reform the Common Agricultural Policy was not appraised by all participants, but amongst those that did some gave it a low score for various reasons (would not impact diet, too difficult to change) but accepted that the

Positive aspects of controversial options

	Perspectives giving highest ranks	Perspectives giving lowest ranks	The most positive appraisal criteria used by Perspectives giving the lowest ranks
Planning	AEF	B	Provides extra health benefits; could be generally popular; could be effective
Advertising	AFG	BDE	Provides extra health benefits; is generally popular; could be good for industry
Labelling	CEFG	B	Is generally popular; is feasible to implement; could be effective
Subsidies	G	BDE	Provides extra social benefits; provides extra health benefits; good for industry
Taxes	--	ABDEF	Provides extra social benefits; provides extra health benefits; good for public finances
CAP reform	CD	FG	Could be generally popular; could be effective

Perspectives: 'A' Public interest NGOs; 'B' Food chain operators; 'C' Small food & fitness operators; 'D' Large non-food operators; 'E' Policy-makers; 'F' Public service providers; 'G' Public health specialists.

Validation and evaluation of the PorGrow findings

option could be generally popular and might, in the right circumstances, have a significant effect on diet and health. No formal validation of the PorGrow project had been planned, but two opportunities arose for recording stakeholder views using short versions of the PorGrow MCM appraisal method: (i) a preparatory meeting for the WHO European Region ministerial conference on obesity; and (ii) an EC-funded project on child obesity run by the European Heart Network 2003-2006.

WHO meeting of NGOs, Brussels, February 2006.

This meeting was attended by representatives of a wide range of non-governmental organisations concerned with obesity and health, including sports organisations, consumer organisations, medical professions and health-related NGOs. Those stakeholders came from a similar range of organisations as those in the public interest NGO Perspective in the present study (but primarily representing interests at EU level). During this meeting an option-appraisal exercise was held in which participants appraised all 20 PorGrow options using three criteria of their own choosing, with each criterion weighted to indicate priority. The most strongly supported policy options were:

- School food and health education
- Improved health education
- Mandatory nutritional information labelling
- Controls on food composition
- Controls on food and drink advertising.

Statistical comparison of the scores on all 20 options with the rankings obtained from the public interest NGO Perspective of the PorGrow project showed a strong degree of association between the two sets of scores ($r=0.66$, $p<0.01$).

European Heart Network meetings of stakeholders in 14 countries and at EU level.

These meeting used multi-criteria appraisal of PorGrow's 20 options adapted for child obesity policies. The meetings were attended by a variety of stakeholders in 14 member states and at an EU-level meeting in Brussels. At the EU-level meeting the five most strongly supported options were:

- Controls on types of food sold in public institutions
- Controls on food and drinks advertising
- Mandatory, improved nutritional labelling
- CAP reform with subsidies for healthy foods
- Improve training for health professionals

In 14 member state meetings, the most strongly supported options were:

- School food and health education
- Controlling sales of foods in public institutions
- Controls on food and drink advertising
- Improve communal sports facilities
- Improve training for health professionals
- Subsidies on healthy foods
- Change planning and transport policies

In both the WHO meeting and the EHN series of meetings, the options attracting least support were:

- Physical activity monitoring devices
- Medication for weight control

- Substitutes for fat and sugar
- New government body
- Control of marketing terms 'diet', 'lite' etc.
- Taxes on obesity-promoting foods

The findings from these additional meetings of stakeholders closely match those of the PorGrow study, with broad stakeholder support for options such as better labelling and controls on advertising, and little support for 'technological' options or taxation.

Core vs Discretionary option scores

Because Discretionary options were scored only if a participant wished to, their scores should not be directly compared to those for Core options as there is a potential bias in their favour (an unpopular Core option would get a relatively low score, whereas an unpopular Discretionary option would probably be rejected from the scoring process, so that the only scores it would attract would be from participants who viewed it more positively).

Two methods may be used to assess this potential bias. The first is to assume that rejected Discretionary options would have low or zero appraisal scores if they had been Core options, and make a reduction to the their rankings accordingly. A second approach is to compare the PorGrow results with the data from the WHO meeting of NGOs referred to above where all participants were required to score all 20 options. When applied, this second approach suggested that a small deflation (around 10%) of the scores for the Discretionary options might be sufficient to reduce possible bias. In any case, the application of either approach did not alter the main conclusions of the PorGrow programme, but rather strengthened the argument that educational initiatives should be integrated into a broad package of measures such as controls on marketing, better nutritional labelling, more sports facilities and controls on the foods sold in places such as schools.

Participant bias

As some of the options may have been materially advantageous or threatening to specific interested parties, average scores for options were re-analysed after excluding participants who might have wanted to protect or promote particular options. The option number and the categories excluded are shown here:

Option	Cat.s excluded	Option	Cat.s excluded
1	11, 13, 20	11	2, 3, 4, 17
2	11, 13, 20	12	2, 3, 4, 5, 6, 17
3	11, 13, 20	13	8, 10
4	1, 2, 3, 4, 5, 6	14	16, 17, 19
5	1, 2, 3, 4, 5, 6, 9	15	14
6	1, 2, 3, 4, 5, 6, 9	16	8, 15
7	1, 2, 3, 4, 5, 6	17	8, 12, 18
8	1, 2, 3, 4, 5, 6, 9	18	1, 2, 3, 4, 5, 6
9	1, 2, 3, 4, 5, 6, 9	19	8, 9
10	2, 3, 4, 5, 6	20	1, 2, 3, 6, 9

The results showed no significant difference in the ranking of the options. Scores typically changed by less than 1%, and an exceedingly close statistical correlation with the original scores ($r=0.99$) indicated that the interests of the stakeholder were not significantly affecting the PorGrow findings. However, a future study may wish to consider exploring participants' interests more fully, and widening the range of

Participants' assessment of the process

stakeholders to include, for example, obese people, their families and colleagues.

Evaluations of the procedures used in the collection of interview data are given in the individual country reports. Almost all invited participants agreed to be interviewed, and in a few cases they asked to bring colleagues to join in the procedure. Material was circulated to participants in advance and in many cases this prompted extensive preparation, including meetings with colleagues and background research before the interview.

All participants accepted the procedures and all participants successfully completed the interview, although the time taken for participants to undertake the interview process varied. Participants reviewed their choices at the end of the interview and were invited to comment on the procedure and the graphical presentation of the results of their scores. Examples of comments from participants show that they were frequently highly supportive, and could appreciate the benefits of the Multi-Criteria Mapping approach:

"The best thing about this process is the system's possibility for establishing a dialogue, a chat and being able to state your view of the problem and fit it into the system. In my opinion, this is the most serious survey carried out so far." (Food processing company)

"Holding of the interview was excellent." (Pharmaceutical company)

"The best part of the process was the computer programme used and the interviewer's ability to carry out the interview process. ...it is the ability to express and understand what the interviewee wants to say. This is very good." (Life insurance industry)

Nonetheless, the process was criticised for taking a long time (typically over two hours of interview time), for requiring advance preparation (which some participants did not undertake adequately), and for the complexity of the scoring process. But perhaps the greatest concern was expressed by participants who felt that the results of the survey would have little impact on policy-makers:

"The results of this project will allow the necessary policies to be found, but there may be difficulties in applying them due to the interests of public and private institutions, especially if people are interested in solving the problem but they don't know how to deal with it. The family or the person has the difficulty but does not know how to solve it. The government does know but is not interested or is driven by its economic and commercial interests." (School teacher representative)

"It all makes a contribution and is very useful although the targets set in relation with obesity do not depend on this report but on the political desire to do it." (Pharmaceutical industry)

References

1. Molarius A et al. Educational level, relative body weight, and changes in their association over 10 years: an international perspective from the WHO MONICA Project. *Am J Public Health* 2000;90:1260-8.
2. House of Commons Health Committee. *Obesity: Third Report of Session 2003-04*, Volume 1, Annex 1. London: The Stationery Office, 27 May 2004.
3. Jackson-Leach R, Lobstein T. Estimated burden of paediatric obesity and co-morbidities in Europe. Part 1. The increase in the prevalence of child obesity in Europe is itself increasing. *Int J Pediatric Obesity* 2006;1:26-32.
4. Lobstein T, Jackson-Leach R. Estimated burden of paediatric obesity and co-morbidities in Europe. Part 2. Numbers of children with indicators of obesity-related disease. *Int J Pediatric Obesity* 2006;1:33-41.
5. Schwimmer JB, Burwinkle TM, Varni JW. Health-related quality of life of severely obese children and adolescents. *J Am Med Ass* 2003;289:1813-9.
6. Silventoinen K et al. WHO MONICA Project. Trends in obesity and energy supply in the WHO MONICA Project. *Int J Obes Relat Metab Disord* 2004;28:710-8
7. Slimani N et al. Diversity of dietary patterns observed in the European Prospective Investigation into Cancer and Nutrition (EPIC) project. *Public Health Nutr* 2002;5:1311-28
8. HBSC. Young people's health in context: Health Behaviour in School-aged Children 2001/2002. *Health Policy for Children and Adolescents 4*. C Currie et al (eds) Copenhagen: WHO Regional Office for Europe, 2004.
9. Eurobarometer. *Physical Activity*. European Commission: Brussels, 2003.
10. World Health Organization. *A physically active life through everyday transport with a special focus on children and older people*. A Davies (ed). Copenhagen: WHO Regional Office for Europe, 2002.
11. French et al. Pricing and promotion effects on low-fat vending snack purchases: the CHIPS Study. *Am J Public Health* 2001;91:112-7.
12. Parker G, Mason J. EU legal threat to junk food advertising. *Financial Times*, 19 January 2005.
13. Stirling A. Multi-criteria Mapping: mitigating the problems of environmental evaluation. In: J Foster (ed) *Valuing Nature? Ethics, Economics and Environment*. London: Routledge, 1997.

Policy options for responding to obesity

Summary report of the EC-funded project to map the views of stakeholders involved in tackling obesity – the PorGrow project

Dr Tim Lobstein and Professor Erik Millstone

SPRU – Science and Technology Policy Research, University of Sussex, UK

The present document is based on the following research reports (available at www.sussex.ac.uk/spru/porgrow):

European Union

Policy options for responding to obesity: cross-national report of the PorGrow project.

Erik Millstone, Tim Lobstein, Andy Stirling and Lisa Mohebati

SPRU – Science and Technology Policy Research, University of Sussex, UK.

Cyprus

Policy options for responding to the growing challenge from obesity. Cyprus national report.

Sawas C Sawva and Michael Tornaritis
Research and Education Institute of Child Health, Cyprus.

Finland

Policy options for responding to growing threat of obesity (PorGrow) – Finnish national report.

Patrik Borg and Mikael Fogelholm
UKK Institute for Health Promotion Research, Finland.

France

Stakeholder views on policy options for responding to the growing challenge from obesity in France.

Findings from the PorGrow project.

Michelle Holdsworth, Yves Kameli and Francis Delpuech
IRD – Institut de recherche pour le développement, Centre de Montpellier, France.

Greece

Policy options for responding to the growing challenge from obesity. Greek national report.

Caroline Codrington, Katerina Sarri and Anthony Kafatos
Preventive Medicine & Nutrition Clinic. Faculty of Medicine, University of Crete, Greece.

Hungary

Policy options for responding to the growing challenge from obesity: stakeholder views in Hungary. Hungarian national report.

Zoltánné Horváth, Mária Gilinger Pankotai and István Szabolcs
Department of Dietetics, Semmelweis University College of Health Care, Hungary.

Italy

Policy options for responding to obesity. Italian national report.

Bruna De Marchi, Sara Casati and Giulio Tarlao
Institute of International Sociology of Gorizia. Italy.

Poland

Policy options for responding to the growing challenge from obesity. Polish National Report.

Lucjan Szponar, Janusz Ciok, Agnieszka Dolna and Maciej Otazewski
National Food and Nutrition Institute. Poland.

Spain

Policy options for responding to obesity: Spain National Report.

Carlos Álvarez-Dardet, Vicente Clemente, Laura I. Gonzalez, Zapata, Rocio Ortiz and Gaby Margarita Ortiz.
Observatory of Public Policies and Health, University of Alicante, Spain.

United Kingdom

Policy options for responding to obesity: UK national report of the PorGrow project.

Tim Lobstein, Erik Millstone, Miriam Jacobs, Andy Stirling and Lisa Mohebati
SPRU – Science and Technology Policy Research, University of Sussex, UK

PorGrow (*Policy options for responding to the growing challenge from obesity: a cross-national comparative study*) is a NEST (new and emerging science and technology) research project, financed by the 6th Framework Programme for research and technological development of the European Commission (Contract n°508913)

Stakeholders' views on tackling obesity

Obesity in Europe is reaching epidemic proportions, and Europe's policy-makers need more information on the approaches that will be the most acceptable and effective.

The PorGrow project interviewed food producers, manufacturers and retailers, advertisers and caterers, life insurers, pharmaceutical companies, teachers, sport and physical activity organisations, public health experts, town planners, advocacy organisations and consumer groups in nine countries: Cyprus, Finland, France, Greece, Hungary, Italy, Poland, Spain, and the UK.

Interviews were conducted using innovative software-based methodology (Multi-Criteria Mapping) which provides reproducible and transparent structured information on the stakeholders' perceptions and judgements.

The results reported here indicate that a comprehensive portfolio of policy measures, integrated into a coherent program, would be well-supported by broad coalitions of stakeholders. The costs of such a programme were not considered important by the interviewees compared with the potential costs of not taking action.

Our findings show that policy makers can be confident that the great majority of stakeholders recognise the need for action and are prepared to accept their costs, but that the 'upstream' interventions such as marketing controls, changing planning and transport policies and fiscal measures, will need to be justified in terms of their wider health and social benefits.

Policy options for responding to obesity

Summary report of the EC-funded project to map the view of stakeholders involved in tackling obesity – the PorGrow project

Dr Tim Lobstein and Professor Erik Millstone

www.sussex.ac.uk/spru/porgrow

ISBN: 1-903721-04-0

Published by
SPRU – Science and Technology Policy Research
University of Sussex, Brighton BN1 9QE, UK

© 2006 SPRU