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accompanying the

WHITE PAPER ON

A Strategy for Europe on Nutrition, Overweight and Obesity related health issues

IMPACT ASSESSMENT

{COM(2007) 279 final}
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Definition of key terms

Key definitions used in the Impact Assessment are physical activity, diet, obesity and body mass index.

Physical activity

Physical activity is defined as any body movement produced by skeletal muscles requiring energy expenditure (Casperson et al, 1985; National Institutes of Health, 1995). It encompasses physically intense activities but also moderate activities such as walking, cycling and climbing stairs. Research literature often makes the distinction between work, transport, domestic and leisure related physical activities. In the literature, it is mentioned that at least 30 minutes of regular, moderate-intensity physical activity on most days of the week 'is sufficient for cardiovascular/metabolic health, but not for all health benefits' (WHO, 2003).

Physical inactivity has become the second most important risk factor for ill health, after tobacco smoking. Coronary heart diseases, diabetes, hypertension, obesity (including overweight) are the main prevailing diseases arising from sedentary lifestyles (Wen et al, 2005). In this assessment, much of the focus is on obesity. For preventing obesity, the recommendation is to conduct 60 minutes a day of moderate-intense activities (WHO, 2003).

Diet

In this report, diet is defined as food consumption, which is expressed in kilocalories per capita per day (WHO, 2003). This definition is often used for measuring and evaluating the evolution of the global and regional food situation.

Overweight and obesity

Overweight and obesity are both labels for ranges of weight that are greater than what is generally considered healthy for a given height (U.S. Department of Health and Human Services, 2006). Obesity is an excess of body fat that frequently results in a significant impairment of health. The most significant consequences include hypertension and hyperlipidaemia (major risk factors), coronary heart disease, ischemic stroke, diabetes mellitus type 2, certain types of cancer, osteoporosis and psychosocial problems (De Jong et al, 2005) - see also list above.

Body Mass Index: indicator of obesity

The most commonly used indicator of obesity is the Body Mass Index (or BMI), a measure of body weight (in kilograms) divided by height (in metres) squared. The World Health Organization (WHO) has defined obesity as a BMI $\geq$ 30kg/m^2 (WHO, 2000). The threshold for normal weight is set at 18.5 - 24.9 kg/m^2, that for overweight at 25 and over.[1] In the International Obesity Task Force (IOTF) EU Platform Briefing Paper (2005)

[1] Note that there can be confusion about the use of the word 'overweight'. It may refer to all persons with a BMI of 25 or more, or it may refer only to those persons with a BMI between 25 and 29.99 (sometimes this is referred to as 'overweight non-obese' or 'preobese') (Millstone et al, 2006).

it is mentioned that 'a WHO expert group has recommended that for Asian populations in a lower 'action point' of BMI ≥ 23 should apply in assessing weight and health status, given evidence of their vulnerability to heightened risk for related chronic diseases at lower BMI levels'.

Although a BMI ≥ 30kg/m^2 is the common definition of obesity, some (older) studies used different definitions. For instance, Colditz (1992) and Wolf and Colditz (1994), Lévy et al (1995) use cut-off points of ≥ 29kg/m^2 and > 27kg/m^2, respectively. Still, in this assessment obesity is defined as a BMI ≥ 30kg/m^2.

BMI = weight/(height)^2	
Underweight	<18.5
Normal range	18.5 to < 20.0 and 20.0 to < 25.0
Overweight	25.0 to < 30.0
Obese	≥ 30.0

IMPACT ASSESSMENT[2] ON A COMMISSION WHITE PAPER ON NUTRITION AND PHYSICAL ACTIVITY

1. EXECUTIVE SUMMARY

Health is a key driver for Europe's growth and prosperity: a healthy workforce contributes to future societal productivity and growth. The EU wishes to become the world's most competitive economy by 2010. It is increasingly clear that putting in place cost effective interventions to improve health status will result in economic benefits for society and improvements in future productivity and competitiveness.

There is evidence that lifestyle factors contribute to the lion's share of ill health in the European Union, and that poor diet and low levels of physical activity are central to this. A clear, tangible, indicator of this is rising overweight and obesity levels in the EU. However, there are other independent diet related factors such as salt intake (which contributes to high blood pressure), and low fruit and vegetable intake which contributes to a number of cancers.

The impact assessment is targeted on the issue of poor diets and low levels of physical activity, and within this on obesity and overweight in particular as the most visible, tangible evidence of the problem. Weight levels are rising across the EU, and this poses both a health and an economic threat to the EU27. Obesity and overweight are risk factors chronic conditions such as Type 2 diabetes, cardiovascular diseases, certain forms of cancer as well as greater ill health due to back pain and depression[3]. An increased prevalence of type 2 "adult onset" diabetes has been reported in obese children in the US[4].

This is costing the EU both in terms of the human trauma of ill health and death, and in economic terms in its impact on current and future health care costs and productivity. Three quarters of type 2 diabetes, a third of ischaemic heart disease, a half of hypertensive disease, a third of ischaemic strokes and about a quarter of osteoarthritis can be attributed to excess weight gain. Studies from the UK and the USA already show that obesity reduces life expectancy[5,6], and the impact may become greater in future given the increase in childhood obesity.

As a result health care costs for these non communicable conditions, which already account for the lion's share of total health expenditure can be expected to rise parallel to increasing prevalence of overweight and obesity. Estimates of *direct* costs of obesity alone in the EU in the 1990's ranged from 1% of health care expenditure in the Netherlands and up to 3.1-4.2% in Germany, and 6% in Belgium. As a long term chronic condition, diabetes is one of the most costly conditions to society. Complications resulting

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2 On the basis of SEC (2005) 791 of 15 June 2005 (Impact Assessment Guidelines)

3 The Challenge of obesity in the WHO European Region and the strategies for response. WHO Europe. 2006

4 Burke, JP et al. Impact of case ascertainment on recent trends in diabetes incidence in Rochester Minnesota. American Journal of Epidemiology, 2002, 155 (9): 859-865

5 Peeters A et al. Obesity in adulthood and its consequences for life expectancy: a life-table analysis. Annals of Internal Medicine, 2003, 138:24-32

6 Department of Health – Economic and Operational Research. Life expectancy projections, Government Actuary's Department: estimated effect of obesity (based on straight line extrapolation of trends). London, The Stationary Office, 2004

from Type 2 diabetes alone accounts for between 5-10% of total health care spending in the EU[7].

Four options are analysed. These are A) Do nothing (abandon existing actions), B) Maintain status quo, C) Strengthen voluntary approaches (building on existing actions), and D) Strengthen the legislative framework. Given the size of the problem as defined, and the range of actions at Community that can contribute, there is a clear rationale for a stronger response from the Community – indicating a choice of option C or D.

Option C is preferred over Option D given (i) indications that it may prove as effective as Option D, (ii) that as a voluntary approach it may yield faster results, and (iii) because the structure of the food industry is one where a few, large companies dominate and industry data indicates that these companies will benefit from implementing actions in this area.

2. PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES.

The Commission has conducted an external consultation process through a number of channels since 2003. The objectives of the consultation process have been to gather the opinions and views of the stakeholders on issues to be included in the White Paper on Nutrition and Physical Activity that can support Member States to improve nutrition and physical activity levels.

The Commission published a Green Paper *"Promoting healthy diets and physical activity: Towards a European strategy for the prevention of obesity and chronic diseases"* in December 2005[8] in order to give stakeholders and Member States the opportunity to put forward their positions related to nutrition and physical activity. Nearly 300 responses were received from a broad range of stakeholders and the results were published in September 2006. Within this consultation framework the Network on Nutrition and Physical Activity, consisting of experts nominated by the EU Member States, has held six meetings since 2003.

Furthermore, the EU Platform on Diet, Physical Activity and Health has held series of meetings to develop and explore actions for improving nutrition and physical activity. The EU Platform involves the participation of a number of EU level organisations representing economic operators, sport organisations, public health and consumer organisations. It also includes the participation of the European Parliament, international organisations such as the WHO and has involved a number of different DGs of the European Commission such as DG TREN, DG EAC, DG RTD and DG AGRI.

The Commission has also pursued dialogue with stakeholders through forums organised around more specific cross-cutting topics. An example of this is the series of Advertising Round Table[9] discussions held by the Commission between October 2005 and March 2006 to explore approaches to responsible commercial communication. A recent research project financed by the Commission, PorGrow, has also provided useful information about stakeholder views.

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7 The cost of diabetes in Europe – Type 2 survey (CODE-2)

8 http://ec.europa.eu/health/ph_determinants/life_style/nutrition/green_paper/consultation_en.htm

9 http://ec.europa.eu/consumers/overview/report_advertising_en.htm

Within the Commission, internal consultation has been pursued through the creation of an Inter-Service Steering Group (ISSG) which was set up in October 2006, and whose mandate is set out in Annex 1. The ISSG was developed from a nutrition sub-group of the Inter-service group on Health which was created in 2005. The Group was led by the Directorate General for Health and Consumer Protection (DG SANCO) with the participation of the following DGs: the Enterprise and Industry DG, the Education and Culture DG, the Environment DG, the Employment, Social Affairs and Equal Opportunities DG, the Agriculture and Rural Development DG, the Research and Technology Development DG, the Statistical Service DG, the Economic and Monetary Affairs DG, and the Secretariat General.

The internal process to develop an impact assessment was supported by an external contract, financed under a framework agreement, carried out by RAND Europe Foundation. The contractors provided an ex ante assessment on the economic impact of the different policy options identified in the Roadmap for the Nutrition and Physical Activity White Paper (hereinafter referred to as the 'IA Background Report'). This report can be consulted at the Commission's public health web site (*http://ec.europa.eu/health/index_en.htm http://ec.europa.eu/health/index_en.htm)*.

2.1. The Impact Assessment Board

The Impact Assessment was submitted to the Board on 9 March and discussed at the Board meeting of 4 April. In its opinion, the Board requested that SANCO consider the possibility of resubmission. The decision was taken by SANCO not to resubmit to the Board given the delays that this would have on the time frame for adoption of the proposal. However, in response to the comments of the Board, we have extensively redrafted the document. This includes:-

- Reordering and strengthening the arguments relating to subsidiarity
- Clarifying the options (what range of actions distinguish them) and strengthening the link between options and their costs and benefits
- Strengthening the comparison of options in terms of economic, social and environmental impacts
- Reducing the length of the Report, particularly by shortening the length of the problem definition (from 26 to 11 pages)
- Adding evidence of the linkages between health and economic productivity
- A revised executive summary

3. PROBLEM DEFINITION

3.1. Much of the burden of disease could be prevented with lifestyle changes

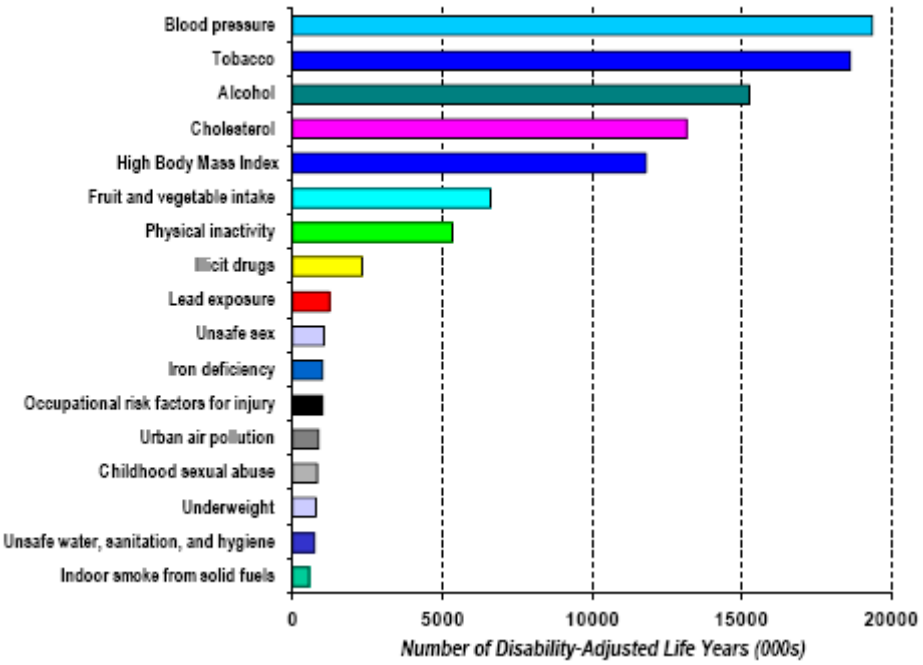
Much of the disease burden in the EU could be prevented with lifestyle changes, and this is getting worse with clear signs that diet and physical activity levels are worsening in the EU. According to the WHO, largely preventable chronic diseases cause 77% of the

disease burden in the European Region[10]. The WHO estimates that around 80% of heart disease, stroke and type 2 diabetes, and 40% of cancer, could be avoided if common lifestyle risk factors were eliminated.

Of the diseases that are preventable a significant portion of ill health is due to a combination of poor diet and low levels of physical activity. According to the WHO, 6 of the 7 leading risk factors for ill health in the WHO EURO region are linked to nutrition and physical activity: the risk factors are blood pressure, cholesterol, high body mass index, (low) fruit and vegetable intake, physical inactivity and alcohol.

Figure 1 shows the burden of ill health (in disability adjusted life years) due to the leading risk factors in the European Region.

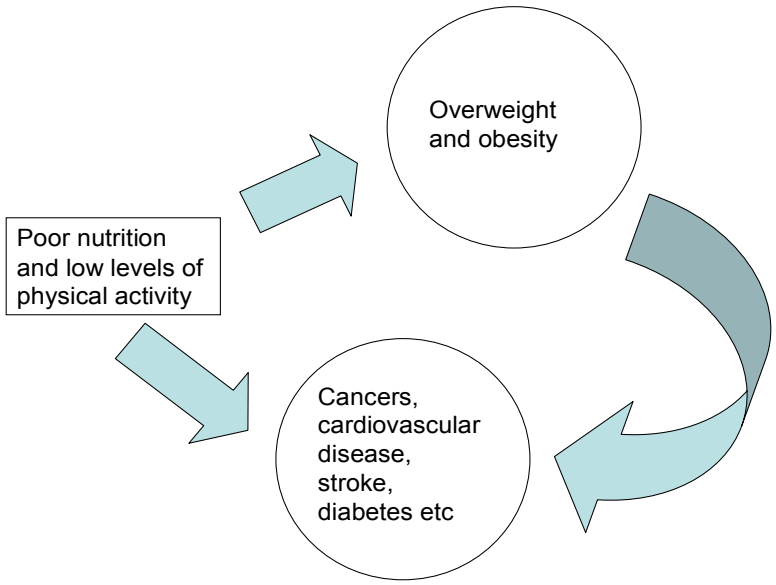
Figure 1: Leading risk factors for ill health in the European Region



Source: World Health Report 2002[11]

Of the major risk factors related to diet and physical activity, one in particular – high BMI – is a particular cause for concern in the EU. et related cancers, or stroke). Figure 2 describes the relationship between nutrition, physical activity, obesity and a range of health conditions. Poor diet and physical activity cause a range of conditions of which one is obesity and overweight. Obesity and overweight further exacerbate many diseases. However, a number of diet and physical activity related conditions can occur without being linked to additional weight (such as various diet related cancers, or stroke).
Figure 2: Relationship between nutrition, physical activity, overweight and obesity and the range of associated health conditions

[10] Comprising 53 countries (including the EU-27).
[11] http://www.who.int/dietphysicalactivity/publications/facts/en/gsfs_ppt_rf.pdf



Adult obesity prevalence was estimated to be 15.7% in 2005 for the EU27. Estimates of overweight and obesity among adult women range from around 35% (Italy, France) to about 70% (Malta). For adult males, the prevalence range from about 45% (Estonia) to around 75% (Germany and Czech Republic). The estimates of overweight and obesity in children aged 7-17 range from 9% (Netherlands, Slovakia) to about 35% (Malta) (Millstone et al, 2006).Figure 3: Mean Body Mass Index in EU-27, 2005

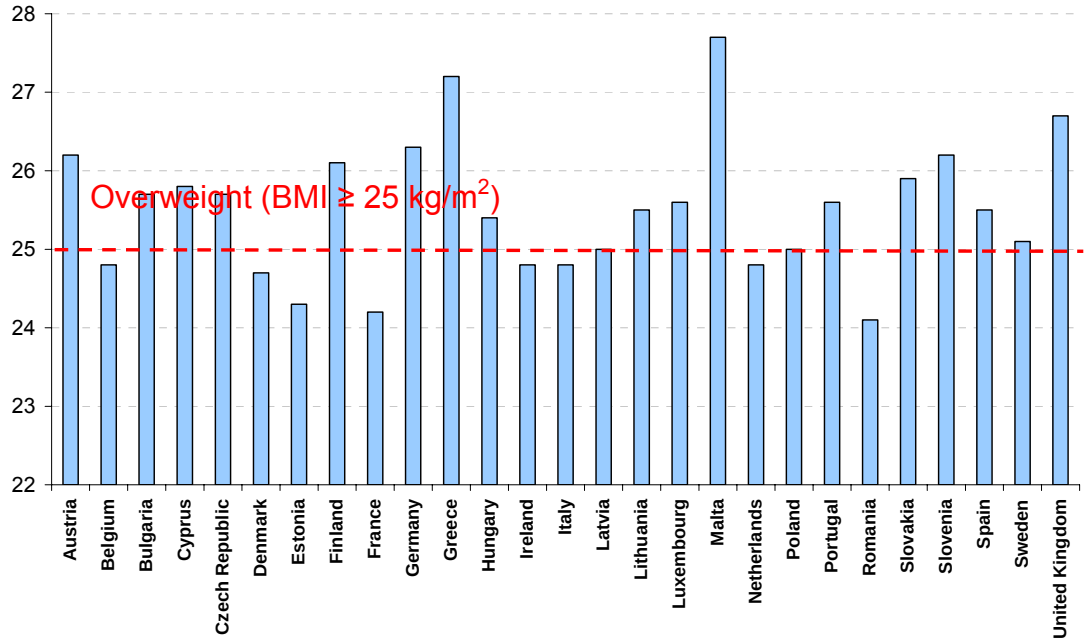


Figure 3 shows the mean BMI of each of the EU Member State, and reveals the fact that 19 out of 27 EU member states (Latvia, Poland, Sweden, Hungary, Lithuania, Spain, Luxembourg, Portugal, Bulgaria, Czech Republic, Cyprus, Slovakia, Finland, Austria, Slovenia, Germany, United Kingdom, Greece, and Malta) have mean BMIs which exceed

25 kg/m^2. This analysis of mean BMI clearly illustrates that the overweight/obesity problem is widespread across Europe. For some countries, the problem could be that an average person is overweight; for some other countries, the problem could be that while most of the people in the country are not overweight, a certain segment of the population is seriously obese.

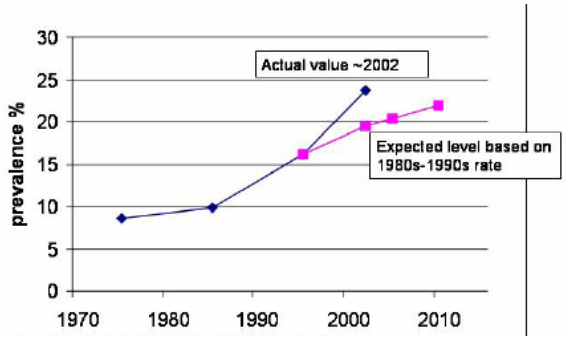
Moreover, the WHO estimates that most countries in the EU have an increasing trend in obesity, with the exception of Estonia, Hungary, Latvia, Lithuania, Poland and Romania for which prevalence is expected to remain fairly constant at a high level. The projected rate of increase in EU-15 is therefore expected to rise slightly faster than EU-27. From the historical data it can be concluded that rising trends in obesity exists for all countries and age groups. Data from the IOTF in annex 4 show trends in obesity prevalence in adult female and adult males in Europe as a whole and the EU-25 for the years 1990-2005[12]. Additional data in annex 1 (see Figure 11) indicate that this is a global problem.

3.2. The rise in obesity and overweight is accelerating among children

A report by the International Obesity Taskforce in May 2004 highlighted that worldwide one in 10 children is overweight, with a total of 155 million and around 30-45 million in the world classified as obese.

In Europe the report found that childhood obesity has increased steadily with the highest prevalence found in southern European countries. In northern Europe an overweight prevalence of 10–20% was found for children, while in southern Europe the prevalence was 20–35%. According to recent surveys, 36% of 9-year-olds in mainland Italy and Sicily were overweight or obese, while in Greece the prevalence was 26% in boys and 19% in girls aged 6–17 years. In Spain, 27% of children and adolescents were affected while in Crete 39% of children aged 12 were found to be overweight. In the UK the figure reached 20% of children in 1998 according to the IOTF's reference assessment methods. Figure 14, in annex 1, shows the prevalence of overweight and obesity among 13-15 years old in the EU27 (selected countries). Figure 4 below and Figure 12 (in annex 1) provide evidence that the rise in prevalence among children is accelerating. As an indication of the progression on one country, Figure 13 in annex 1, shows the picture for England.

Figure 4. Prevalence of overweight among school children in Europe



Source: International Obesity TaskForce Child Obesity Report 2004 (p1)

Data from the IOTF (Figure 26 and Figure 27 in annex 4) show trends in obesity prevalence in girls and boys in the EU-25 for the years 1990-2005.

[12] http://www.iotf.org/database/TrendsinObesityPrevalence.htm

3.3. Population distribution of poor diets and low physical activity levels

Looking at the prevalence of obesity in specific parts of the population can provide an indication as to where general diet and physical activity problems are concentrated.

3.3.1. Prevalence of obesity relates to age and gender

Prevalence of obesity appears to increase through adulthood with highest levels among adults in their 50s and 60s (Millstone et al, 2006). Older people may be less overweight or obese due to healthier lifestyles during youth and/or selective attrition of the more obese members of the cohorts.

Gender differences are not uniform regarding obesity. Some ethnic groups have significantly more obesity among women. In some countries, women tend to have a higher prevalence of obesity while men tend to have a higher prevalence of non-obese overweight.

3.4. Future trends of obesity and overweight

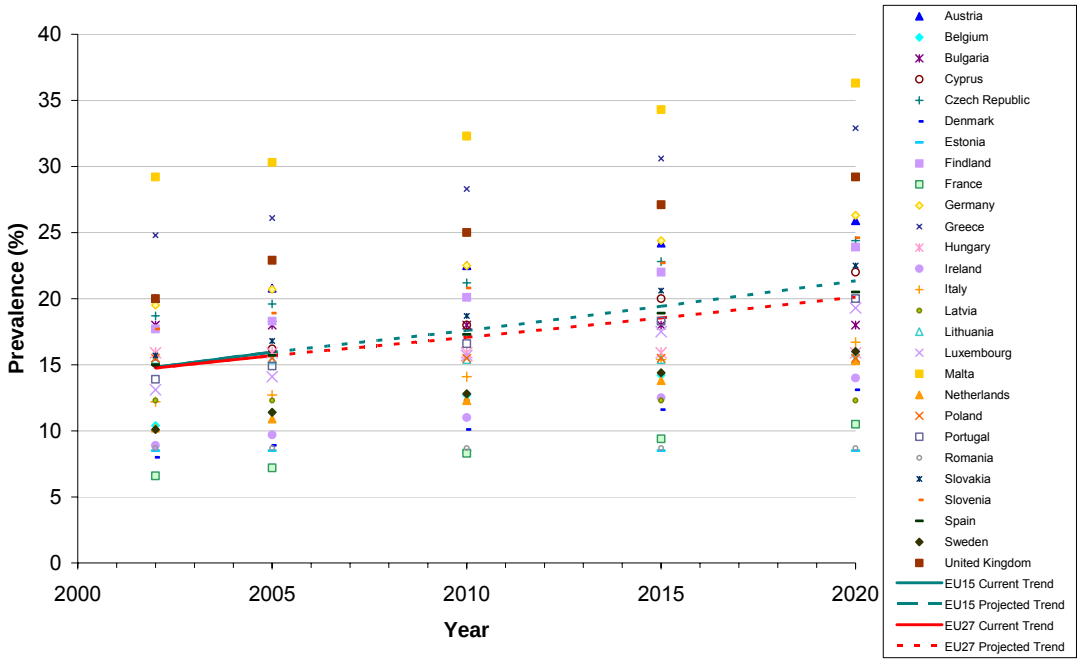
There are few organisations making long-term projections of obesity rates. A review of the prevalence of obesity by Millstone et al (2006) as part of the PorGrow project showed that there have been no cross-national surveys in Europe, with the exception of the WHO MONICA (Monitoring Cardiovascular Disease) project[13]. In general, health surveys of national and sub-national samples are used to estimate prevalence of obesity. The most up-to-date and comparable figures are collated by the International Obesity Taskforce (IOTF). The data is retrieved from the WHO's non-communicable disease database for the years 1980-2005, differentiating between adults (males/females) and children (boys/girls).

In order to estimate the prevalence of *obesity* in Europe, the IA background report extrapolated the WHO projected trend to 2020, assuming a linear growth (see Figure 5). For EU-27 as a whole, the adult obesity prevalence is 15.7% in 2005, meaning that that close to 65 million Europeans (excluding children) are clinically obese. Table 6 in annex 1 shows the prevalence and ranking of obesity in 2005 and 2020.

Assuming linear growth, and with no intervention, there will be little changes in the ranking of obesity prevalence between 2005 and 2020. Malta, Greece and UK will remain in the highest ranks, with prevalence levels of 36.3%, 32.9 and 29.2 respectively. The prevalence of obesity in EU-27 will reach 20.1% in 2020.

Figure 5. Obesity in Europe: trend analysis

[13] 1980-1995, sampling populations in 38 locations in 21 countries worldwide - http://www.who.int/cardiovascular_diseases/en/



Source: WHO Infobase

However, assumptions underlying the above calculations indicate that these may be conservative predictions. Firstly, the growth in obesity has been assumed to be linear with a constant gradient. Observing the upward trend in individual countries, where there is better trend data, there are indications that the gradient becomes steeper. Figure 17 in annex 1 shows the experience of the US from the late 1980's using self reported and corrected data. The upward trend is linear, but steep and levels have risen from around 15% in 1988 to nearly 30% in 2005 for men, and from 21% to 35% in women. Secondly, the analysis does not take into account the way that obesity and overweight are rising in children. Data from individual countries indicate that this is not linear, and therefore that the future rise in the adult population can be expected to be steeper.

3.5. Reducing salt intake would reduce high blood pressure in the EU population

The relevance of salt intake in the EU population relates to the role of salt consumption in the prevalence of high blood pressure, the highest risk factor for ill health in the region. (High blood pressure is, like obesity and overweight, partly due to poor diets.) Sodium chloride, or table salt, increases average levels of blood pressure. Various controlled intervention trials and observational studies have provided strong evidence that consuming a moderately reduced intake of sodium (salt) contributes to lowering blood pressure. Ill health from high blood pressure (hypertension) is due to the role it plays in cardiovascular disease and stroke.

The data on salt intake is variable in the EU. Estimates suggest that average salt intake in Europe is around 9–11 g/day (based on data from the 1988 Intersalt study). A WHO/FAO (2003) technical report recommends the consumption of less than 5 g sodium chloride (or 2 g sodium) per day as population nutrient intake goal, with the need to ensure that the salt is iodized. However, across the EU there is a wide variety of quantitative and/or qualitative recommendations on salt intake, see annex 4. For example, the recommendation in the Netherlands is less than 9g/salt/ day while in Denmark, Estonia

and Finland it is less than 5g/ salt /day. Some countries do not have specific recommendations, but make general dietary recommendations such as to avoid salt, or food rich in salt (such as Hungary and Greece).

According to the Food Standards Agency in the UK, approximately 75% of salt consumed by the UK population is from processed foods, with 10-15% added by consumers and 10-15% is naturally present in food.

3.6. Health implications of poor nutrition and low levels of physical activity

As stated earlier, six of the seven most serious risk factors for ill health are the result of diet and physical activity levels. These are blood pressure, high cholesterol, lack of physical activity, high BMI, alcohol and low intake of fruit and vegetables. In Table 8 below, the possible effects of dietary intake and body composition on non-communicable diseases is presented.

3.6.1. Health implications of obesity and overweight

Obesity and overweight are risk factors for Type 2 diabetes and cardiovascular diseases such as myocardial infarction and ischaemic stroke, and other effects include cancer at various sites, gallstones, narcolepsy, asthma, cataracts and musculo-skeletal disorders such as osteoarthritis.

There is evidence that even a slight rise in weight increases an individual's risk of certain health conditions. According to the analyses carried out for World Health Report 2002, approximately 58% of diabetes and 21% of ischaemic heart disease and 8-42% of certain cancers globally are attributable to a BMI above 21 kg/m2.

3.6.2. Health implications of excess salt consumption

It is well established, from a range of genetic studies, epidemiological studies and interventional studies, that there is a causal relationship between salt intake and cardiovascular disease. Epidemiological studies have also reported a significantly positive association between sodium intake (salt) and stroke. Moreover, many studies have demonstrated that a high salt intake is positively associated with an increased risk of high blood pressure.

The efficacy of reduced sodium intake in lowering blood pressure has also been well established.

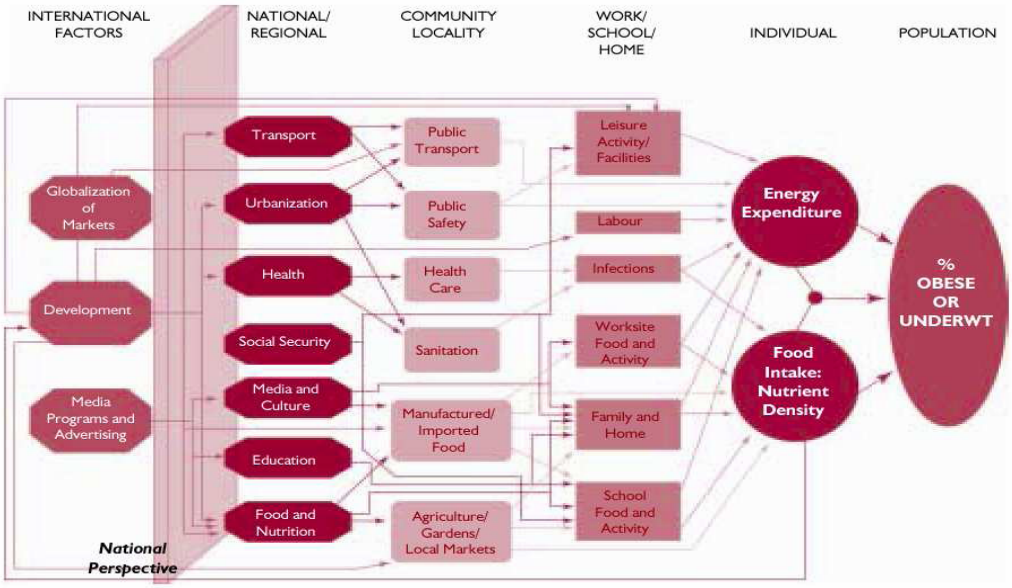
Long term comprehensive salt reduction programmes have been to found to be very effective in producing health benefits. For example, in the North Karelia project in Finland, an average 30-35 % reduction in salt intake reported during 30 years in Finland was associated with a dramatic 75 % to 80 % decrease in both stroke and coronary heart disease mortality in the population under 65 years.

3.7. Causes of poor nutrition, low physical activity and the rise in overweight/obesity

Having established that diet and physical activity levels are worsening in the EU population, it is important to look to the reasons why this may be so as to best direct our

response. The picture for nutrition and physical activity is extremely complex. What we eat is influenced by our preferences, and by our utility for available food choices, and by our income, attitudes and behaviours. Figure 6 describes the causal web for food intake and energy expenditure that leads to obesity and overweight.

Figure 6. The causal web of influences on population weight gain



Source: IOTF

There are trends in Europe in the supply and consumption of different foods, and nutrients that have taken place alongside the rise in prevalence of obesity, indicating that this may be one element. There is also evidence that physical activity is below recommended levels, although the data is too limited to observe trends.

3.7.1. Europeans may be eating more, and the diet is not balanced

The Food and Agriculture Organization (FAO) figures suggest that during 1961-2001, the energy supplied by food grew over 15% in Europe[14].

In addition, from the available data on food consumption:-

- The percentage of total energy from fat consumed rose very slightly between 1996 and 1998. Most Member States, with the exception of Portugal and Ireland, report diets with greater than 35 percent of calories from fat[15].

- There is also evidence that fruit and vegetable intake is well below recommended levels in most countries. According to recent surveys only Greece, Italy, France and Spain consume the recommended 400g of these foods each day, the minimum internationally recommended amount (WHO-HFA, 2005; (Byrne, 2001). In half of the EU Member States, the average fruit and vegetable consumption is less than 70 percent

[14] Food Balance Sheet at http://www.fao.org/waicent/portal/statistics_en.asp

[15] Economic Research Service, 2004

of the WHO recommended value (Robertson and Knai, 2000). It is estimated if consumption was increased to 600g per day then 135,000 deaths a year could be avoided throughout the EU due to cardiovascular disease and stroke[16].

- The only pan-European data on children's food consumption are WHO surveys of self-reported health behaviour of children between 11 and 15. In 2001-2002 nearly 50% did not regularly eat breakfast on school days and most did not eat vegetables or fruit daily. Prevalence of soft drink and candy consumption was about 30% overall, topping 40% in some countries (WHO Regional Office for Europe, 2004).

Another way to gain insight into population consumption patterns is to consider the trend in consumer price index of different types of food. Data from the harmonised index of consumer prices indicate that the consumer price index of cereals and vegetables has increased at a higher rate than for meat and diary products, which are higher in fat. This differential rate of change in price illustrates that such foods are (relatively) expensive (e.g. Drewnowski and Darmon, 2005). Given that vegetables are relatively more expensive, low income families may have reduced, over time, their consumption of vegetables compared to other foods, in order to reduce family expenditure on food.

There is therefore some evidence to indicate that Europeans may be eating more. However, this is not conclusive as some studies have reported that the lack of physical activity may be more important in the rise of overweight and obesity (Brettschneider et al, 2005). Further studies may be needed to determine the relevant role of these factors in obese and overweight populations.

3.7.2. Small increases in food consumption can cause weight gain, or other health effects

All countries publish dietary recommendations for the level of particular nutrients to be consumed to keep within healthy limits, see the table on nutrient or food based recommendations in EU member States in annex 2. While there are some variations in approach by Member States, in general they send a fairly consistent message to consumers.

Foods high in fats, salt and sugar are problematic to these guidelines because of the extent to which they allow for consumption of these nutrients to easily exceed recommended levels. For example, a typical 33 cl can of a fizzy drink contains 35 grams of sugar. Therefore one can of soft drink a day will exceed the recommended levels (where this is expressed a grams per day guideline, many countries have formulated the recommendation based on sugar as a %age of total energy.)

3.7.3. The relevance of genetic factors

Genetic factors play a role in obesity. There are some individuals that, as a result of their genes, struggle with overweight and obesity regardless of how they eat or how much physical activity they take. Recent research has identified which genes may be responsible for individual weight gain (M. McCarthy et al, Science 2007).

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[16] Fruit and Vegetable Policy in the European Union: its effect on the burden of cardiovascular disease. Karen Lock and Jocelyn Pomerleau. European Heart Network. 2005

However, genetic factors cannot account for the rise in obesity and overweight prevalence that is being observed in the EU and globally today. This is because the genes of the population have not fundamentally changed in the last few decades. In other words, while genetic factors will always account for some degree of obesity in a static population, they cannot be a driver for the increasing prevalence that is being observed unless the fundamental genetic mix within the population is changing or has changed.

3.7.4. Evidence of relationship between proposed underlying factors to weight gain and obesity

The increasing prevalence of overweight and obesity may be seen simply in terms of decreasing levels of physical activity and increasing intake of energy dense foods. However, Table 1 below shows the potential factors causing weight gain and obesity and provides an indication of the strength of the evidence based on meta-analysis of peer reviewed data (WHO, 2003). The assessment of strength of evidence is based on a review of all available sources, i.e. evidence of clinical trials, associated evidence and expert opinion.

Table 1. Etiological factors related to weight gain and obesity and the strength of the evidence

Evidence	**Decreased risk**	**No relationship**	**Increased risk**
Convincing	• Regular physical activity • High dietary intake of non-starch polysaccharides (dietary fibre) • Fruits		• Sedentary lifestyles • High intake of energy-dense micronutrient-poor foods
Probable	• Home and school environments that support healthy food choices for children		• Heavy marketing of energy-dense foods and fast-food outlets • High intake of sugars-sweetened soft drinks and fruit juices
Possible	• Breastfeeding • Low glycaemic index foods	• Protein content of diet	• Adverse socioeconomic conditions (in developed countries, especially for women) • Large portion sizes • High proportion of food prepared outside the home (developed countries) • "Rigid restraint/periodic disinhibition" eating patterns
Insufficient	• Increased eating frequency		• Alcohol

Source: WHO meta-analysis of available peer reviewed data, 2003

4. THE CASE FOR ACTION AT EU LEVEL

4.1. Current legislative framework at Community level

The approach to tackle diet and physical activity advised by most public health analysts is to empower the individual to make healthy decisions. This implies a combination of reminding the individual of the responsibility that they have to themselves and their

children, but also shaping the environment in which we live into one in which making healthy decisions is made easy. An example might be providing where possible safe cycle paths for those who wish to cycle, or for example to encourage vending machines to sell water as well as fizzy drinks.

There are a range of competences at the EU level, and existing legislation, which contribute to shaping the environment for healthy decision making at Member State level. For example, from food law there is existing legislation on health claims on foods, and on nutrition labelling. The legislation which establishes the framework for support to agricultural sectors through the Common Agricultural Policy is an influence, as is the legislation that creates the structure for programmes (such as the structural funds, research programmes, transport and urban programmes) to finance relevant actions at Member States and so on. Other legislation which is influential in shaping the environment for healthy eating is the television without frontiers directive (TVWF) currently under revision to the Audio-Visual Services Directive (AVSD).

There is therefore substantial related legislation that is spread across a number of policy areas, and which is subject to regular updating and revision over time. For example, the AVDS legislation is currently under revision, health claims legislation was recently revised, nutrition labelling will be reviewed in 2007, and 2008 will see further review of the CAP. Hence, there is a need for a high level oversight of the direction that such revisions of the legislation should take in order to contribute to the objective of shaping the environment to support healthy decision-making. It is this, rather than an explicit question of enforcement related issues, or any kind of malpractice, that drives the need for a White Paper at this stage

4.2. Rationale for future EU actions

This impact assessment describes a picture of worsening diet and physical activity levels in Europe. It analyses the impact that this will have on the health of EU citizens, on society, on the welfare burden, and on the economy in general. It sets out a number of possible rationales for why this is happening, and a framework for action.

For public health professionals, the worsening picture for nutrition and physical activity (brought into sharp focus by the rise in obesity prevalence, but by no means limited to this) is a serious concern because it signals an epidemic of chronic disease for the future. Although obesity prevalence levels are different from one Member State to the other, the overall tendency towards increase of weight in the population is converging. Mankind has not faced this particular threat before.

There is a legal base for EU action in the form of Article 152 of the EC Treaty, and there have been repeated calls from the Council for the Commission to do more in this area[17]. Moreover, Council Conclusions being prepared for the EPSCO under the German

[17] Council Resolution of 29 June 2000 on Health and Nutrition (OJ, C218, 31.07.2000, p8)
Council Conclusions of 2 December 2002 on Obesity (OJ C11, 17.01.03, p3)
Council Conclusions of 2 December 2003 on Healthy Lifestyles (OJ C22, 27.01.04, p1)
Council Conclusions of 2 June 2004 on Promoting Heart Health (OJ)
Council Conclusions of 6 June 2005 on Obesity, Nutrition and Physical Activity (OJ)
Council Conclusions of 5 June 2006 on Promotion of Healthy Lifestyles and Prevention of Type II diabetes

Presidency in May 2007 call explicitly for the European Commission to develop a strategy in this area.

However, this alone is not sufficient for the EU to take action. Before we can consider the possibilities for the EU can act, it is essential to first show that there are relative competences at the EU level that can contribute, and that it makes sense to intervene at the EU level at all, rather than leave action to Member States alone.

4.3. What action is being proposed?

At one level, the action being proposed is the adoption of a White Paper. The objective of the White Paper is to set out the EU's position on the threat facing the EU in this area, and to propose ways in which the EU can take action until 2015.

The White Paper should set out an EU approach in a number of key action areas that can contribute to tackling the health issues raised above where the EU has competence and/or can add value. The options set out in this impact assessment relate to both the scale of ambition for EU action, and to the regulatory approach that should be taken within the context of an EU strategy.

Given that this is a high level strategy paper, any proposals that the White Paper makes to pursue legislative approaches would necessarily be the subject of separate, individual internal legislative processes (with own impact assessment) as is the case, for example, with the forthcoming review of nutrition labelling.

4.4. The subsidiarity test

Prior to proposing Commission action it is first necessary to establish that conditions are right under the subsidiarity principle. This can be broken down into establishing that action is both necessary and will provide added value to actions at Member State level. Finally with the problem clearly defined it is necessary to ensure that the measures chosen are proportionate to achieving the stated objectives, in the form of the boundary test.

4.4.1. Establishing necessity

Like Lisbon, or the Open Method of Coordination for Social Policy, the case here rests on potential gains from more EU action perhaps more than on the "costs of non-Europe".

Arguments establishing necessity are as follows:

(1) **There are transnational aspects to improving nutrition and physical activity levels within Member States**. For example, there are intra-EU transnational aspects in relation to the way that food is manufactured. Food manufacturers have reduced the level of nutrients (such as salt) in products for some Member States but not for others. Multiple recipes and multifold sales chains are therefore maintained, with a cost both to economic efficiency and with uneven health benefits to consumers (passport lottery). The result is that in some countries a basket of manufactured foods will be a higher risk for hypertension (high blood pressure) and stroke than the same basket in another country. For clarity, the intention is not to harmonise consumption patterns and life styles, but to identify and contribute to tackling unhealthy trends.

Additional trans-national elements include the issue of advertising/marketing of foods high in fats, salt and sugars to children. For example, Sweden has legislated to ban advertising of such products to children but has been undermined in its efforts by satellite TV channels broadcast from other Member States into Sweden which show such adverts. Actions which are successful to reduce the level of advertising to children of such foods in Europe (whether by voluntary or regulatory means) will complement and support Sweden's domestic action.

(2) **There is a strong internal market dimension to food, diet and obesity and physical activity, for example in the cross border sale of agricultural and manufactured foods**. This is reflected in a number of past ECJ rulings interpreting internal market freedoms have involved aspects of agricultural or manufactured foods. For example, the WTO case on GMOs, recent Member State bans on novel foods and even the withdrawal of centralised authorisations of obesity drugs.

(3) **Although Member States are increasingly taking action, but there is as yet no sign that obesity and overweight are levelling or beginning to fall anywhere**. To a certain extent this reflects the fact that Member States have not yet fully introduced all the possible range of measures within their competence to combat the issue. But it also reflects that the solution do not lie entirely at the Member State level. There are global factors that influence the supply of manufactured foods onto Member State supermarket shelves, in the form of the global food industry, and there are both Community factors, such as the Common Agricultural Policy, that influence food supply to Member States. However, Member States are not managing the problem on their own, which indicates both the need for a more serious commitment within Member States, and a need for a more co-ordinated approach, marshalling the competences that exist at the EU level.

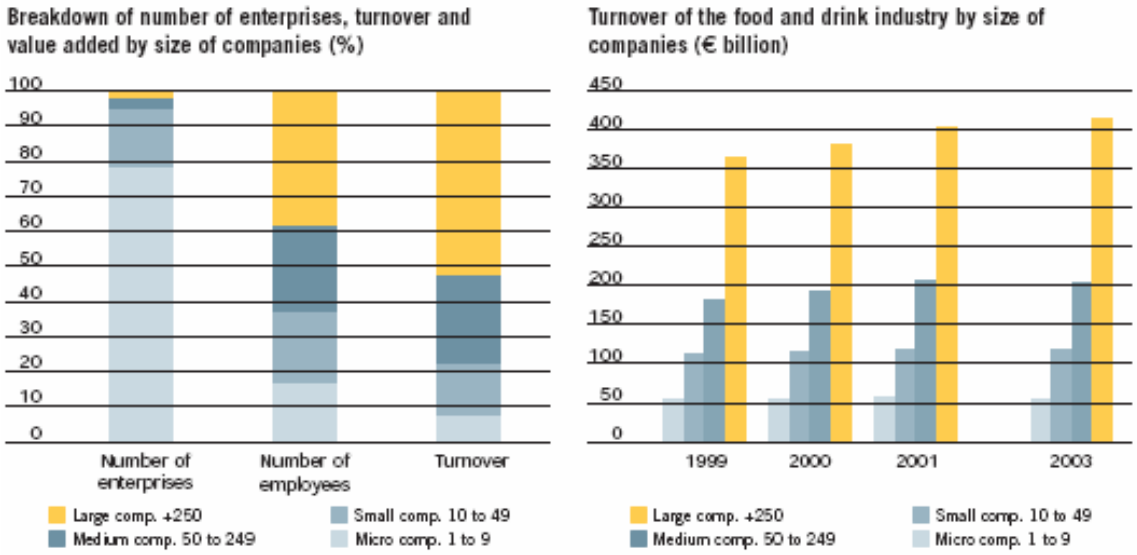
(4) **There are legal competences at EU level that can contribute to creating a framework across all Member States** that will both support national efforts, help consumers make healthy choices and ensure minimum standards for consumers across the EU. For example, most food law exists at EU level and this has a role to play in consumer information on foods, and the development of standards for food products therefore influencing diet. Furthermore, there is evidence that the Common Agricultural Policy plays a role in the way it influences the supply (and therefore price and demand) of many different foodstuffs onto national markets. The EU also has competence to pursue EU wide restrictions on the marketing of foods to children where appropriate (e.g through the Audio-Visual Media Services Directive).

(5) **Within the scope of a comprehensive policy on diet and physical active, there are policy options that would deliver better results than action by Member States alone.** For example, the Community has legal competence in the field of nutrition labelling. This is an action that contributes to a better diet improving the information, and therefore decision making, of EU consumers. Action at the EU level would deliver better results than a series of individual actions by Member States. This is because i) action across Member States may simplify administrative burden on any food companies operating either transnationally or Community wide, and ii) uniform action will ensure Community wide minimum standards for

consumers and thereby reduce inequity for citizens across the EU. Depending on the form that a revision to the labelling directive would take, there is the potential that this would reduce confusion to consumers as they move and purchase food across the Union. However, the White Paper will not include specific proposals to revise the labelling directive, as this will be the subject of a separate Communication and Impact Assessment later in the year.

(6) **Action can avoid intra-EU inefficiencies by creating a level of playing field for food manufacturers and retailers.** For example, as far as nutrition labelling is concerned (to be the subject of separate Impact Assessment later in the year) a proliferation of incompatible labelling requirements could undermine current single market opportunities for the food chain. In addition, manufacturing of food and drinks is increasingly dominated by large, multinational companies, that tend to operate on a pan-European basis, see Figure 7.

Figure 7 Structure and turnover of the food and drink industry



Source: Eurostat data – taken from Data & trends of the European Food and Drink Industry, CIAA Report 2006

(7) **Obesity and overweight levels are rising in all Member States although at different speeds**. This supports the notion that there are Community wide or global factors influencing the picture, and consideration of how supranational policies and/or action can be part of a response.

4.4.2. Establishing added value

In order to establish added value, it is necessary to first determine whether the EU level is the most appropriate level for action, and whether there are individual actions that contribute to improving nutrition and physical activity levels of Member States that can best be achieved by the Union. The EU adoption of a White Paper on Nutrition and Physical Activity passes the value for money test because:-

(1) **Experience shows that EU level action has broadened policy consensus and the effort of many actors.** The 2004 Obesity Round Table and 2005 Nutrition

Platform have created more momentum in some Member States than existed before. Economic operators have welcomed the "recognition" the EU level brings for their efforts (Nestlé), cooperation (CIAA) and the challenge to economic operators to improve their game (WFA, EASA). National authorities (such as Spain, Poland, Slovenia) see a synergy between EU-level strategic orientations and examples and their own local strategic orientations and examples and their own local efforts. The WHO, both within the European Region and at global level, welcomes EU leadership. The US Administration, China and Canada are among the third countries who have welcomed an EU interlocutor on these common challenges.

(2) **Other policies at EU level can play a role in creating a framework that supports healthy eating and physical activity within Member States**. According to article 152 of the European Commission, "A high level of human health protection shall be ensured in the definition and implementation of all Community policies and activities". This calls for a "health in all policies" approach. Moreover, an important related policy relates to urban transport policy and a Green Paper is being prepared to explore this. It is therefore important and timely to consider the interrelationships between these policies.

(3) **EU level co-ordination and action can be the catalyst to spread to the EU27 the health gains that have been shown in less than 5 years in countries such as Finland (salt and heart health initiatives) and Poland (fats and heart health initiatives).** The EU level is also an important forum to share best practice in terms of physical activity in daily transport.

(4) **The approaches that European countries are adopting to tackle nutrition and physical activity issues are very different[18].** Therefore there is added value to Member States for the EU to monitor these approaches, to share the results of effectiveness through strengthened networking, and monitoring, and to compare approaches with a view to learning lessons. For example, Denmark and Norway have both approached the issue of restricting the level of transfats in foods through different approaches. Denmark has pursued a regulatory approach, while Norway has opted for voluntary methods. The evidence would indicate that similar results have been achieved (see annex 2). Understanding and dissemination of the comparative national strategies will assist other EU countries to determine their own approach. Article 152 of the EC Treaty states that "The Community shall encourage cooperation between Member States in the areas referred to in this Article and, if necessary, lend support to their action."

(5) Given the Community wide, and even global, dimension to many stakeholders in the field of nutrition and physical activity, economies of scale arise from an EU-led dialogue with these actors. For example, on the nutrition side on issues such as the reformulation of foods (to reduce their content of fats, salt or sugar) there will

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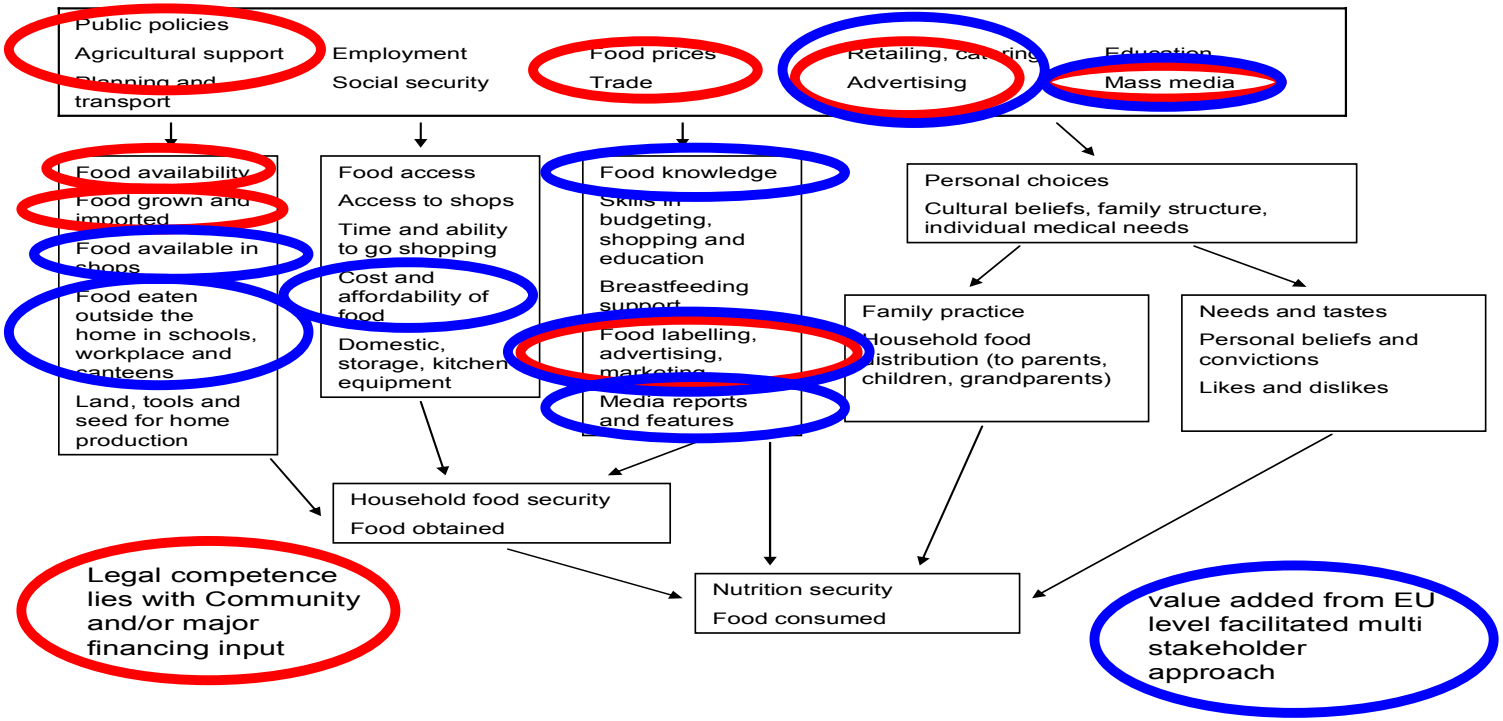
18 A summary of Member States actions was compiled for a German Presidency conference on this topic held in Badenweiler, 25-27 February 2007. The file will shortly be available on the Presidency webite. The WHO also carried out a comparative analysis of nutrition policies for their Member States (including the EU27) which can be accessed on their website, at: http://www.euro.who.int/Document/NUT/Instanbul_conf_%20ebd02.pdf

be considerable time and cost saving for both the industry actors, and for Member States, if dialogue takes place in an EU level forum. Dialogue at this level should also allow any agreements made to be put in place across the Union rather than to varying degrees across the Member States. The EU Platform on Diet, Physical Activity and Health has already demonstrated its effectiveness to actively engage with EU wide economic operators, universities, public health and consumer organisations. For example, in the voluntary agreement by a number of food and drinks manufacturers to restrict advertising of their products to children under 12. Policy options to be pursued under the White Paper would relate to how to build on this established form of dialogue.

(6) Figure 8 overleaf summarises the value added picture by highlighting those influences on individual food choices that are themselves either influenced by existing Community policies, programmes or competences or which lend themselves to a partnership approach with diverse stakeholders. The diagram only represents the diet side of the equation, and a similar picture could be drawn for influences on physical activity.

Proportionality aspects of an EU response (the "boundary" test) are considered in section 7 following the presentation and analysis of the options.

Figure 8: Influences on food choices of EU citizens: value added from an EU level facilitated multi stakeholder approach (in blue) and Community influenced choices (in red). Adapted from Robertson et al (2004)



5. OBJECTIVES

On the basis of the scale of the problem outlined in section 3, and the arguments in favour of Community involvement presented in section 4, the general objective of the EU nutrition and physical activity approach is to reduce the health and economic harm due to poor diets and low levels of physical activity and thereby contribute to a healthier society, higher productivity and a sustainable economic development in line with the objectives set out in the European Council's Lisbon objective of more Healthy Life Years for all.

More specifically, the objective of the European Commission is to support Member States to improve diet and physical activity levels of the EU population, and in particular to reduce the prevalence of obesity and overweight.

5.1. Specific objectives

With the overarching goal (as stated above) to reduce the ill health due to poor diets and low levels of physical activity, specific objectives are therefore to increase the level of physical activity within the EU population and to improve the population diet.

5.1.1. Reduction of obesity (a key medium term indicator)

Obesity and overweight are a sign of a developing problem, and their prevalence can act as an indicator for success. In line with the World Health Organization targets agreed by the EU27 at the WHO Ministerial Conference on Counteracting Obesity, a specific objective is to reverse the trend of rising prevalence of obesity in the EU by 2015. This is both an objective in itself, and an indicator that progress against the overall goal is being achieved because actions aimed at improving diet and physical activity levels will, if effective, have an observable effect on the obesity prevalence. Conversely, success in reversing the rising prevalence of obesity and overweight can be considered as an indicator for success in improving overall diet and physical activity levels.

5.1.2. Interim objectives and their indicators

Observing a fall in obesity prevalence requires, however, at least a medium term perspective. It will be necessary to identify objectives and indicators observable between now and 2015. Such interim objectives cannot be health or obesity prevalence related because the time frame to observe an impact is too short. Therefore, interim objectives and their indicators can be linked to progress in setting up a framework for action, which will in turn be linked to the option in question.

For example if continuing or extending a stakeholder approach, a number of process indicators need to be identified linked to the development of systems for voluntary approaches in the different Member States (e.g. related to the development of Self Regulatory Organisations perhaps) or implementation of actions on the part of private actors. This can be linked to the monitoring process under development by members of the EU Platform.

The EU27 have the same objective by agreeing to the European Charter on counteracting obesity (WHO, 2006) at the WHO Ministerial Conference in Istanbul in November 2006. The Charter formulates the following ambition: "Curbing the epidemic and reversing the trend is the ultimate goal of action in the Region. Visible progress, especially relating to children and adolescents, should be achievable in most countries in the next 4–5 years and it should be possible to reverse the trend by 2015 at the latest[19]."

5.2. Possible actions at EU level

Actions at Community level should be those that work within the framework set out in Table 1. Actions to tackle population weight gain should contribute to these objectives across the population, and particularly in most at risk populations. Table 2 sets out these objectives, alongside areas where the community policies that could contribute to them.

Table 2: Possible/example Community actions that fit within an evidence based framework for improving diet and physical activity levels

Factors	**Possible actions**	**EU level context**
• Regular physical activity	Awareness raising campaigns Create incentives Develop the physical environment, e.g. by aligning transport policy objectives to promote physical activity	Public Health Policy Sport policy Transport policy Structural funds Development of partnerships
• Reduce dietary intake of energy dense micronutrient-poor foods	Raise awareness (campaigns, nutrition labelling) Product reformulation Align food production incentives	Public Health Policy Food policy CAP Development of partnerships
• High dietary intake of non-starch polysaccharides (dietary fibre) foods	Raise awareness (campaigns, nutrition labelling) Align food production incentives	Public Health Policy CAP Food policy
• Fruits	Awareness raising campaigns	Public Health Policy

[19] European Charter on Counteracting Obesity, November 2006 http://www.euro.who.int/Document/E89567.pdf

	Align food production incentives	CAP Food policy
• Home and school environments that support healthy food choices for children	Awareness raising campaigns Promotion activities in schools Develop Partnerships	Public Health Policy CAP (through promotion of withdrawn foods) Partnerships: EU Platform on Diet, Physical Activity and Health Education policy
• Heavy marketing of energy-dense foods and fast-food outlets	Restrict marketing of foods (through legislation or voluntary measures) Health Claims	Media policy Food policy Development Partnerships
• High intake of sugars-sweetened soft drinks and fruit juices	Raise awareness (campaigns, nutrition labelling) Develop partnerships	Public Health Policy Partnerships: EU Platform on Diet, Physical Activity and Health

The above actions all contribute to objectives where the observed relationship with the risk of weight gain is convincing or probable, as based on the WHO's analysis provided in Table 1. These possible actions are further described in Annex 1.

5.3. The options

This section sets out the broad options for the Commission approach and within which specific actions could take place.

a) No EU level activity: In this option, policy decisions and initiatives would be left largely to Member States and stakeholders, without coordination at European level. Existing actions would be abandoned.

b) Status Quo: The EU would continue to facilitate the dialogue between stakeholders through EU Platform on Diet, Physical Activity and Health and the Network on Nutrition and Physical Activity for as long as these forums are perceived to add value. And beyond this, it would limit its role to financing projects within the Public Health Programme, the FP7 facilitating the exchange of best practice, and collecting and disseminating information on nutrition and physical activity. However, this option would neither involve coordination of activities across policy domains, nor any comprehensive strategy.

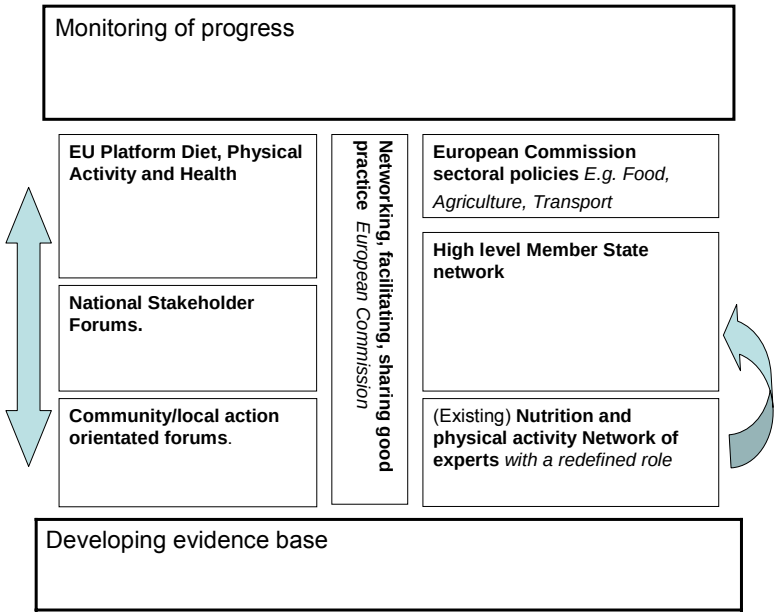
c) A comprehensive EU-wide strategy: Building on option 2, this option would seek to develop actions at Community level but also attempt to galvanise action at local and regional level within Member States, and through new channels that are not normally responsive or reachable through the use of innovative approaches. This would therefore involve the development of new mechanisms to influence activity at national and local level, for example by seeking to develop new forms of partnership with grassroots organisations, or new approaches to private actors willing to commit to support the Nutrition/PA agenda.

In taking a partnership approach, this option would seek to focus on self regulatory mechanisms to achieve progress in those policy areas where private actors have a role to play. For example, to encourage the food industry to better implement and monitor their own activities related to self-regulation and to common codes of conduct on commercial communication and reformulation.

Option C would also seek to develop a clearer architecture for partnership that builds on the EU Platform, and creates better links between it and the policy development process within Member States so that close dialogue and fast action can be achieved.

Figure 9 shows, below, a simplified picture of the proposed relationships.

Figure 9: Basic elements of a proposed new architecture for EU partnerships



The activities to co-ordinate actions of the EU institutions, the Member States, private stakeholders (such as sharing best practice, or motivating action) would then take place in a clarified strategic environment at the EU level.

Another way that Option C differentiates itself from the status quo is through the development of better monitoring systems. For example, an early action will be to establish (in liaison with partners) a set of baseline indicators linked to voluntary systems or specific actions themselves, such as reformulation. From these, progress

towards creating systems and the implementation of actions by different stakeholders will be established.

A stronger partnership framework would not alter the Commission's approach in areas where there are legislative frameworks already in place, such as for nutrition labelling. Rather it would seek to strengthen these areas by promoting complementary voluntary actions.

d) Purely regulatory approach: While the current level of stakeholder actions would continue, this option would seek to strengthen the legislative framework for those policy areas where there is further potential to do so (such as restrictions on advertising to children etc, and reformulation) rather than pursue stakeholder approaches in these areas (There is already a legislative framework in place in some policy areas such as nutrition claims, and nutrition labelling).

The impact of any of the identified policy options to reduce harm caused by poor diets or inadequate physical activity will depend on their more detailed content, on the preferences and choices of the main actors at all levels and on the way in which the various measures are implemented.

Options A and B are self standing options, and mutually exclusive. Options C and D are cumulative.

5.3.1. What is envisaged under the options?

Table 3. Options for the Commission's approach derived from the Commission's roadmap for Nutrition and Physical Activity

A. Abandon existing actions	B. Status Quo	C. "Local Action, EU wide" : policy of more comprehensive, EU networked local action	D. EU Rules: additional legislative framework
Abandon legislative framework for health claims, advertising (UCP/TVSF), nutrition labelling Abandon joint research (FP7, PH programme) information gathering/dissemination (PH Programme) Abandon multi stakeholder voluntarism and joint learning (EU Nutrition	Maintain current legislative framework up to date, on basis of case by case IA Maintain multi stakeholder voluntarism in Platform and in follow up of Advertising Round Table Continue joint research,	Develop local voluntarism where not yet present Seek to develop EU wide action on salt reduction as pilot Increased effort to achieve EU wide support for effective self regulation	EU level norms for marketing and advertising of foods to under 16s, reformulation Continue with existing partnership actions, and pursue the development of a stronger legislative framework.

Platform, Advertising Round Table)	information gathering and dissemination		

According to article 152, the Commission should work towards strong coherence between all its policies and public health objectives. Therefore, developing integration with policies across the Commission relates to all options, and is not considered here explicitly in relation to any particular option. However, developing policy coherence at Community level may be easier within the context of a comprehensive EU strategy as proposed under option C.

6. ANALYSIS OF IMPACTS

In case of broad policy defining documents, such as Commission Communications or White Papers, the analysis of impacts remains often largely qualitative as principle of proportionality is being applied. In this IA, we aim primarily to analyse the impact of individual policy options on health, and then evaluate the general economic, environmental and social impacts.

6.1. Economic impact

It is now well established that improving the health status of a population has a positive impact on its productivity, and consequently on the economy. EU Member States are increasingly becoming aware of how investing in public health will not only save health care costs in the future, but will also impact positively on the economy. This section describes the cost to the EU of poor nutrition and physical activity. It does this by primarily looking at the cost to society of obesity alone. However, this is just one of the health conditions caused by poor diet and low physical activity levels in a population. Effective action aimed at improving diet and physical activity levels will also reduce costs associated with inter alia high blood pressure, with being overweight (an important factor in diabetes prevalence) and with a range of cancers linked to poor nutrition.

6.1.1. Impact on productivity

Improving the diet and physical activity levels of the EU population will impact on productivity in two ways: firstly, through the fundamental role that diet and physical activity plays in improving health status, and secondly, by reducing obesity and the role that this plays in social inclusion.

Diet and physical activity levels are basic building blocks for good health and lifestyle improvements in these areas will reduce levels of many of the EU's most costly chronic health conditions, such as diabetes, cardiovascular diseases, stroke and a number of cancers. Regardless of the impact on obesity, good population diet and physical activity will reduce incidence of these diseases and so improve health status. International studies have linked improvements to population health status with economic productivity. The most significant of which is the Commission for Macro-economics and

health (CME), a long term macro economic study which established that investments in health can positively impact on economic productivity based on data from developing countries. Later studies have explored the role that health investments can play in the EU context and point out the relationship between health status and the quantity and quality of human capital as a key economic input into the economy. The argument is that like education investments, health investments can help to grow an economy by increasing the supply of and improving the quality of human capital. Investments in human capital are particularly important for long term growth as was observed by the High Level Group on the Lisbon Strategy for Growth and Employment (2004). Further analysis on this issue is in the IA background report.

As section 6.3 describes, reducing the prevalence of overweight and obesity in the EU will have an impact on social inclusion given evidence that overweight and obese people are discriminated against in the workplace, and socially. The issue of social exclusion/inclusion is a central priority for the EU in relation to the Lisbon goals. The Commission intends to designate 2010 as the European Year of combating poverty and social exclusion, and will announce proposals on this topic in October 2007.

6.1.2. Estimating cost of poor diet and low levels of physical activity to the EU

The total direct and indirect annual costs of obesity alone in 2002 in the 15 countries that were EU members before May 2004 were estimated to be €32.8 billion per year according to the IA background report. Later, Fry and Finley (2005) estimated direct and indirect costs of obesity ($BMI \geq 30 kg/m^2$) at 0.3% of GDP for the EU15[20]. Extrapolating this to the EU25 using 2005 GDP figures, results in the cost of obesity as **€40.5 billion a year for the EU25[21], and a cost to the EU of €81 billion for obesity and overweight** (see point 2 in this section below).

These figures greatly underestimate the cost to the EU of poor diets and physical activity because-

(1) Obesity is only one of many effects of poor diets and low levels of physical activity. For instance, Rayner and Scarborough (2005) estimate that food related ill health is responsible for about 10% of morbidity and mortality in the UK and costs the NHS about £6 billion annually. That is, the total cost of ill health due to poor diets exceeds the cost of obesity.

(2) The impact of overweight in adults has not been taken into account. UK data indicates that if you take this data into account then estimates for direct costs above should be doubled. Part of this will be due to the fact that simply being overweight is risk factor for diabetes, and this is one of the most costly conditions for society. It is estimated that three quarters of the cost of Type II diabetes is due to BMI over 25. Other costs relate to the fact that overweight people are likely to be on lower earnings

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20 *Fry, J, Finlay W. The prevalence and costs of obesity in the EU. In: Proceedings of the Nutrition Society, 2005, 64 (3):359-362*

21 Composite GDP figure for EU-27 was not found.

(perhaps reducing the lost-days-of-work costs) and are more likely to suffer low self-esteem and depression (Millstone et al, 2006). These costs may (further) add to the direct health costs and employment-related indirect costs above.

(3) The studies do not tend to consider the cost of consequences of overweight in children.

(4) Many estimates of the direct and indirect costs do not include costs related to other conditions that are exacerbated by obesity such as back pain and depression. Some back pain costs will be attributable to obesity and back pain is one of the most common causes of sickness absence (Millstone et al, 2006). Some psychiatric illness, such as depression, is also caused by obesity. Depression is the largest single cause of lost days of healthy life in developed economies, and besides the human costs they are a major cost to the health services and a cause of lost productivity and more generally of social welfare (Millstone et al, 2006).[22]

(5) Besides the quantifiable direct and indirect costs of obesity, there are intangible costs related to personal suffering, loss in quality of life and premature death (e.g. WHO, 2003; 2004; Detournay et al, 2000). Obesity has serious social and psychological dimensions. For example, excess bodyweight has been linked to a lower likelihood of finding a marriage partner, of finding work and of being promoted (Millstone et al, 2006).

6.1.3. Estimating direct and indirect costs of obesity

Direct costs of obesity includes direct treatment costs such as the cost of consultations, the cost of hospital admissions and outpatient admissions, and the cost of drugs prescribed to help obese patients to lose weight (UK National Audit Office, 2001). To this category, we have also added the direct costs of treating diseases for which obesity is a risk factor, such as coronary heart disease, Type II diabetes, hypertension and osteoarthritis.

A compilation of direct cost studies worldwide reveal that health expenditure per inhabitant attributable to obesity ranges from US$13 (UK, 1998) and US $285 (United States, 1998).

Studies in the WHO European Region indicate that estimates of the direct costs of obesity during the 1990s ranged from 1% of health care expenditure in the Netherlands (Seidell and Deerenberg, 1994) to 1.5% of health care expenditure in England and France, up to 3.1–4.2% of health care expenditure in Germany. A study

[22] For instance, Sobocki et al (2006) estimate that the total annual cost of depression in Europe was Euro 118 billion in 2004, which corresponds to a cost of Euro 253 per inhabitant. Direct costs alone totalled dollar 42 billion, comprised of outpatient care (Euro 22 billion), drug cost (Euro 9 billion) and hospitalization (Euro 10 billion). Indirect costs due to morbidity and mortality were estimated at Euro 76 billion. This makes depression the most costly brain disorder in Europe, accounting for 33% of the total cost. The cost of depression corresponds to 1% of the total economy of Europe (GDP).

from Belgium reported estimates of 6% of THE[23]. Table 4 summarises some cost data from studies carried out in the EU.

Table 4. Direct and indirect costs due to obesity

Country	**Year of estimate**	**Direct costs of obesity- Proportion of total healthcare expenditure (THE)**	**Indirect costs as a proportion of THE**	**Obesity prevalence at the time of the estimate**	**Projected in 2020**
England	1998	1.5% (£479.3 million)	2.6% (£827 million of earnings lost due to premature mortality) 4.1% (£1,322 million of earnings lost due to sickness absence)	19%	29.2%
France	1992	1.5% (FF 5.78 billion)	(FF 0.243 billion)	6.5%	10.5%
The Netherlands	1981-89	1%		5%	15.3%
Germany	1992	3.1-4.2%		18.6%	26.3%

The indirect costs of obesity include obese people having a higher risk of being absent from work due to ill heath or dying prematurely. Estimates of productivity losses in the United Kingdom indicate that these costs could amount to twice the direct health care costs. However, the economic and welfare losses due to obesity depend on the labour market situations and the structure of the social security system. Recent estimates for Spain indicate that including the indirect costs due to the loss of productivity makes the total cost attributable to obesity an estimated €2.5 billion per year, a figure corresponding to 7% of the total health budget.

6.1.4. Likely impact of actions on industry

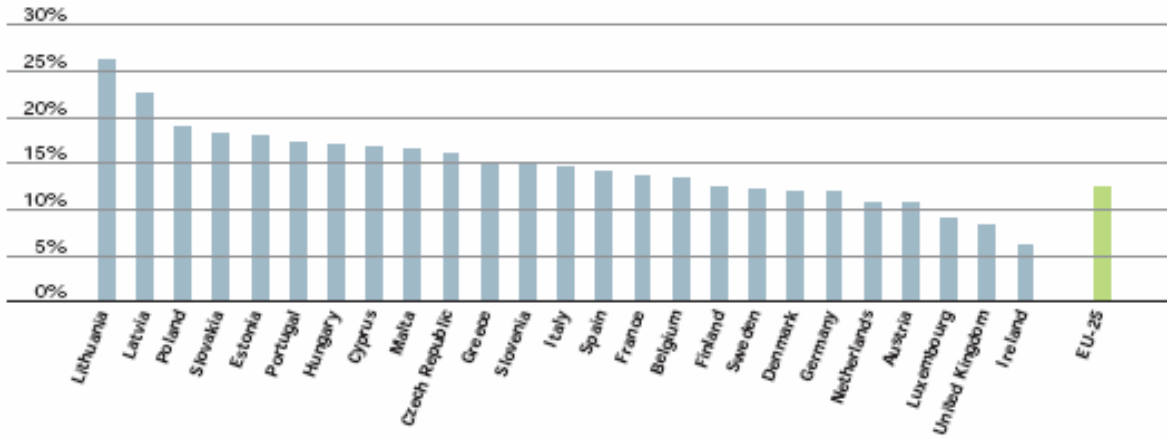
Analysis of the impact of actions on industry focuses mainly on the food and drink industry as this has the major actors involved in actions to improve diet and physical activity levels. Some attention is also paid to the impact of actions on other sectors, such as the airline industry.

[23] Institute Belge de l'Economie de la Santé. Evaluation du coût de l'obesité en Belgique. Briefing 29, June 2000

6.1.4.1. Size and growth of the food and drinks sector

Consumption of food and drinks still constitutes an important element of household spending (see Figure 10), despite downward trends in the last decades.

Figure 10: Household consumption expenditure in the EU: food and non-alcoholic beverages, 2005 (% of total household consumption expenditure)



Source: Eurostat data – taken from Data & trends of the European Food and Drink Industry, CIAA Report 2006

That is also why the food and drinks industry is one of the major key stakeholders in any nutrition policy in terms of its size and in terms of international competitiveness. Manufacture of food and drinks was the second largest manufacturing sector after the metal industry in 2001, with a value added of €176.3 billion according to structural business statistics (SBS) – see Table 10 in annex 1. The sector accounts for 11% and 13% of total EU manufacturing value added and employment, respectively.

Germany, the UK and France together produce over 51% of the Community's value added and 53% of its production in this sector. Most new Member States are highly active in the sector (Cyprus and the Baltic States being prime examples). Greece, Denmark and the Netherlands also tend to specialise in food.

A number of large food and drink companies dominate in the sector. The largest 1% of food and drink companies employ 39% of workers, and account for 51% of the sector's turnover. Table 9 in annex 1, provides information about the largest food and drink companies in Europe. Over recent years, the EU food and drink industry has been growing at around 1.8% per annum. This is similar to the trend reported in the US and in Japan, although food industries in emerging countries such as Brazil and China are reporting greater expansion.

6.1.5. International competitiveness of European food and drinks industry

In 2005 the EU exported food and drink products valued at €48 billion to the rest of the world and imported food worth €43 billion – reflecting an average annual growth of 5.3% and 5.5% respectively between 2004 and 2005. External-trade data show that intra-Community trade in food accounts for over 75% of all trade, with flows of around €120 billion.

6.1.6. Impact of actions on the food industry

Some actions (if they are successful in changing consumer preferences for products) could result in a lower consumption of certain foods, in particular of energy dense foods, and sweetened drinks, and a higher consumption of other foods, particularly fruit and vegetables, and non-starch polysaccharides (dietary fibre) foods. Therefore one could expect to see a change in the structure of the food sector. According to the available analysis, see below, this will bring both threats and opportunities to the relevant sectors.

6.1.6.1. Potential costs

What will be the impact on the food and beverage industry of increasing awareness of and actual policy intervention in the area of nutrition and health? Investment bank JP Morgan draws out some specific challenges of policies for the food industry (Langlois, 2005).

- Potential restriction on advertising to children should result in lower sales growth and diminished brand equity. A full ban on food advertising of certain products would result in volume declines but at the same time increase pricing power and margins (as a result of oligopolistic situations).

- Potential new regulation/policies on distribution of certain products in schools/hospitals could result in lower sales and profits if manufacturers have no alternatives.

6.1.6.2. Potential benefits

The trend towards healthier food creates not only risks but also opportunities. The JP Morgan report notes, "there is an opportunity for brands which genuinely embody 'health' and 'wellness' to build a long-term competitive advantage which should translate into sustainable sales growth and margin expansion." Healthy food is the key driver of sales growth in food and beverage and offers significant pricing power and margin pricing. For example, any costs associated with reformulation of foods could be more than off set if the company is able to market it as (for example) a low-fat/low-salt/low sugar "healthy" product to a growing number of health conscious consumers.

A joint publication by Insight Investment and the International Business Leaders Forum (IBLF) entitled "A recipe for success: how food companies can profit from consumer health" explored the best practice corporate response to the growing obesity threat. It made a number of recommendations for how companies can best adapt and respond to the health concerns of consumers, and the influence that they can have. It notes the significant progress made by some companies but highlights that there are still many more actions that can be taken.

Insight investment manages assets in the region of €135 billion on behalf of millions of HBOS retail customers and nearly 300 institutional clients such as pension and insurance funds. Its developing interest in the corporate response to nutrition, obesity and consumer health is in response to interest by investors who wish to have a better picture of how companies are responding to these concerns.

The picture that companies which respond to health concerns will be rewarded in the market place is backed up by evidence of the adaptability of the food manufacturing sector to the trends. According to Langlois, globally 18 of the 24 fastest growing categories and 6 out of 7 categories growing at double-digit rate are related to consumer perception of health and wellness (Langlois, 2005). JP Morgan noted that these categories are now acting as a key growth engine for the sector.

The study notes three key drivers:

- healthy diet choices: high protein-low carb diets have led egg/meat/fish consumption

- healthy staples: fruit and vegetables categories in different forms (fresh, frozen, shelf-stable) have grown above average. Bottled water is the key beneficiary within soft drinks

- healthy alternatives: soy-based/yogurt drinks, sports/energy drinks vs. other drinks; sugar substitutes vs. sugar; margarine vs. butter.

And conversely, the report also pointed to categories perceived by consumers to be less healthy and which are now exhibiting slower growth or are in decline, see Figure 21 in annex 1.

6.1.7. Other industry impacts

Effective actions to tackle diet and physical activity can be expected to have a positive impact on other sectors adjusting to the increasing BMI of their customers.

One example is the airline industry where there have been reports both of the additional costs related to court actions by passengers seated next to obese travellers, to the additional fuel costs associated with the extra weight. For example, the American Centre for Disease Control estimated in a paper published in the American Journal of Preventive Medicine that US airlines spent $275 million to burn 350 million more gallons of fuel in 2000 in order to carry the additional weight of Americans. The report pointed out that the extra fuel burned also had an environmental impact, with an estimated 3.8 million extra tons of carbon dioxide released into the air.

6.2. Environmental impact

Actions that promote physical activity through the promotion of "active commuting", either through awareness raising campaigns or using Commission funds to improve transport infrastructure for cycling and walking, would be expected to have a positive environmental impact by decreasing the demand for motorised transport. These actions have major synergies with environmental goals, particularly in relation to climate change and air pollution.

Elsewhere, if future actions result in changes to the Common Agricultural Policy in sectors such as fruit and vegetables, or milk, there may be environmental impacts related to land use. These would, however, be considered as part of specific impact assessments on a case by case basis. However, there are no foreseen negative environmental impacts associated with actions such as the development of

partnerships, awareness campaigns, with reformulation or with changes to advertising practice.

6.3. Societal impact

The data also indicates that obesity is a great problem among certain groups including those with lower educational attainment, lower social states and lower self-esteem (Millstone et al, 2006). From the literature:

- Data from 80,000 adults in the WHO MONICA (Monitoring Cardiovascular Disease) project found an inverse correlation between BMI and education in only about half of the male population groups, but in virtually all female groups. The differentials appeared to be increasing over time.

- A study of the correlates of health indicators in developed economies showed that both obesity and diabetes were more strongly correlated with inequality indicators (e.g. income Gini coefficients) than with national average income (Pickett et al, 2005). This result, which is consistent with the hypothesis that socio-economic status may be linked to obesity through relative rather than absolute poverty in wealthier countries – is consistent with other data showing that economic growth is more closely linked to inequalities in education than to average levels.[24]

- Perceived social status and self-esteem are also correlated in ways that suggest a link to health behaviour, consistent with studies showing that most health outcomes are correlated with social status. This both reinforces the inverse correlation between obesity and income and suggests that prevention and treatment may be less successful among lower-income groups.

- There seem to be significant ethnic correlations with higher levels of obesity, especially after several generations of residence. These may be partially attributable to socio-economic factors but may also reflect culturally-specific health-related behaviour patterns.

- In Europe a positive association between socio-economic status and healthy eating is evident, especially in Northern Europe (Roos et al, 2001, Kunst et al, 1999).

- There appears to be an inverse relationship between socio-economic status (defined by e.g. household income, occupation and education level) and physical activity. The WHO (Robertson et al, 2004) summarizes the findings of a number of studies:

[24] A study for the United States shows that highest rates of obesity and diabetes are found among the lower-income groups (Drewnowski and Darmon, 2005). According to these authors the observed links between obesity and socio-economic position may be related to dietary energy density and energy cost: refined grains, added sugars, and added fats are among the lowest-cost sources of dietary energy. On the other hand, the more nutrient-dense lean meats, fish, fresh vegetables and fruit generally cost more. The authors conclude that obesity is a largely economic issue. See also section 3.4 in this report for food price trends of different categories of foods.

- In 1997-1998, the WHO Health Behaviour in School-aged Children study found consistent links between greater family affluence and more self-reported exercise among 15-year-olds surveyed in several European countries (Currie et al, 2000);

- A consumer survey in the EU suggested that adults with less education are more likely to have physically active jobs and more likely to spend time in sedentary leisure when not working (Kafatos et al, 1999).

Therefore the social impact of strategies to reduce overweight and obesity relate both to social inclusion and to non-discrimination. For example, success in reducing prevalence of overweight and obesity will have a positive social impact given evidence linking obesity to discrimination in a number of settings, such as the workplace (e.g Puhl and Brownell, 2001) or in educational settings (Karnehed et al, 2006). A positive social impact can also be expected given the evidence that obese and overweight people are socially disadvantaged in a number of ways. For example, excess bodyweight has been linked to a lower likelihood of finding a marriage partner, of finding work and of being promoted (Millstone et al, 2006).

The discrimination and social disadvantage associated with obesity are compounded by the correlation between obesity and overweight and socio-economic status. Hence, working to reduce overweight and obesity can be expected to reduce discrimination and inequality of treatment in this group compared to those in higher socio-economic groups, and thus promote their social inclusion.

7. COMPARING THE OPTIONS

As mentioned in chapter 5 the Commission has identified four options for future nutrition and physical activity policy:

7.1. Discussion of options

7.1.1. Option A – Abandon existing actions

This option will ignore calls from the Council, and will fail to maximise Community powers that can contribute to the problem.

The policy scene at Member State level in this area is fairly dynamic with a new actions being introduced on a regular basis. This means that abandoning existing EU action would lose any existing value-added in the form of integration and levelling-up. Such value added derives from efforts to ensure that separate and ongoing initiatives do not have gaps, duplicate/wasted effort, overshoot/overkill or contradictory/cross-purpose/rebound effects in terms of diet and activity, and do not conflict with other policies or policy objectives.

Section 3.4 predicts future prevalence of obesity. Figure 4 (repeated from an earlier section) shows how the actual rise of childhood obesity by 2002 was greater than the expected rise predicted in the 1980's and 1990's. In other words, the increase in childhood obesity is accelerating. Behind the diagram is the inference that Member States, in common with other countries around the world, are underestimating the scale of the problem and how to tackle it.

The data describes a situation in which Member State policies have not kept pace with the speed with which overweight and obesity are continuing, and what is required to tackle it successfully. The result would be that diet and physical activity levels would continue to worsen (as indicated by a continued rising trend in overweight and obesity prevalence) and with the corresponding worsening of health status. At a minimum, abandoning existing EU actions implies that the response to diet and physical activity situation in Member States will not be optimised and the range of common Community wide factors that have an impact on the situation in all Member States will either not be addressed at all, or will be addressed inefficiently at a MS level.

When choosing Option A (abandonment of existing actions), obesity trends in EU-27 change. The actual (as opposed to anticipated) prevalence and related costs will be determined by secular trends and patterns in food consumption and physical activity and by the effectiveness of current EU, Member State and industry initiatives. The IA background report projected that in this case the prevalence of obesity in EU-27 will reach 20.1% in 2020 (an increase of 5%). Also, in line with IOTF estimates[25], mean bodyweight in most populations will continue to rise, and could approach 30 kg/m^2 in 2030. As shown in section 4.2, obesity is increasing more rapidly than overweight, which is in turn outpacing mean BMI. This problem seems to be particularly acute in EU-15.

Given these projections, the total costs of obesity are likely to have risen substantially by 2020, in absolute terms at the very least. For direct costs, this reflects diseconomies of scale as demand for treatment and competition for scarce health care resources grows. For indirect costs it comes from the progressive impact on labour productivity and the crowding out effect as obesity-related disorders take a larger share of total health care resources. Still, we emphasise that influences outside the direct policy sphere (e.g. increased awareness and medical innovations) might affect the trend, mitigating the worst effects of the epidemic in years to come. However, the calculation of obesity trend without additional policy intervention was based on assuming the influence to be ceteris paribus.

7.1.2. Option B – Status Quo

Article 152 of the EC Treaty requires the Community to take a 'health in all policies' approach. The size of the health and economic threat facing the EU as a result of poor nutrition and low physical activity, and due principally to the rise in overweight and obesity, call for a more joined up approach to policy development on this issue in the EU.

The interaction between the work of the public health directorate and work in other sectors, such as DG EAC in areas such as sport and youth, or in the fields of research and food labelling, are important on-going efforts which will continue. However, the issues raised in this paper highlight the value of integration between public health and other policy domains at Community level such as information (in relation to

[25] Estimates and projections undertaken by WHO Non-Communicable Diseases Surveillance Unit for the WHO Global Infobase 2006. Available at: www.who.int/ncd_surveillance/infobase/en/

advertising and marketing), transport and agriculture (to consider an integrated approach to food production.)

A White Paper will be a positive first step to integrate policies. Policy consistency and coordination bring their own extra benefits – at the moment, fragmented policies leave vital gaps or even work at cross purposes.

7.1.3. Option C – A comprehensive EU wide strategy

The scope of Option C will include the same drive towards policy coherence at EU level as in Option B, but with an emphasis on EU activities to foster partnerships and knowledge exchange among Member States and among different stakeholders. Options C and D both propose to pursue new policy areas at Community level such as product reformulation and advertising/marketing of foods high in fats, salt and sugars to children. As such, these options are potentially more efficient and effective compared to the A & B as they seek to influence behaviour. The difference between the two options is one of approach: whether to pursue these objectives through voluntary (self regulatory) channels (Option C) or to propose the launch of impact assessments to consider regulation in these areas (Option D).

Option C proposes to explore more fully the scope for the Community to encourage partnerships to tackle nutrition and physical activity, and to explore voluntary actions. EU level partnerships are already being developed through the EU Platform, but option C could seek to develop these, for example by strengthening the link to Member States policy makers, or by exploring the way that the Platform can work with similar forums at Member State or regional level. This would strengthen the base to pursue voluntary approaches in specific policies areas such as reformulation and advertising to children, but also in other areas such as workforce health initiatives and regional or community partnerships designed to encourage physical activity in children.

The development of voluntary approaches should enable the Community to maximise 'win-win' opportunities with economic operators. Changing behaviours in the area of nutrition and physical activity is a major challenge that may benefit from broad participation from economic operators. Regulatory options would only be considered if self regulatory actions show themselves to be ineffective on their own (either as a result of being poorly implemented, or simply because the problem requires additional approaches.) The advantages of voluntary actions are considered to be greater flexibility and more rapid implementation than legislative approaches.

Under option C, there will be additional costs to stakeholders (Member States, economic operators, NGO etc) motivated to attend meetings. Participation would not be obligatory and stakeholders could agree to take part based on their own assessment of costs versus benefits.

Further costs for various stakeholders associated with C will be those related to the need to monitor their actions in a transparent way. The credibility of a voluntary approach lies in the way that changes to the actions of various stakeholders can be demonstrated to others, including the wider public. Such transparency comes at a cost, as our experience in the Platform has already shown. In addition to actually

introducing and carrying out actions Members of the Platform have found it a challenge to be able to show objectively that they have done so. This is particularly a case for global organisations who find it hard at the European level, to monitor actions of their offices "on the ground".

The development of local networks for action will further entail costs to organisations at the various levels (national, regional, community) in terms of the time and resources it takes to participate.

Another shortcoming of option C is that there are risks attached to pursuing a voluntary approach. In many countries, such approaches rely on robust mechanisms for monitoring of adherence to defined codes. For the advertising industry, SANCO has been working to strengthen these systems through a series of meeting with industry held as part of the advertising round table.

Finally the Commission could be criticised for pursuing option C by some actors in the public health /NGO sphere who advocate for governments to regulate industry, and consider this approach to be not acting in the interests of consumers.

As stated in this report, success in influencing consumer preferences, dietary behaviour and physical activity behaviour will be vital if the obesity epidemic is to be addressed. Dietary behaviour, for example, is embedded in cultural, economic and political structures, indicating that changes are needed all along the food chain requiring policy change not only at EU level, but also at national and regional level. The evidence found has shown that combating obesity is complex, requiring interventions 1) at different levels (e.g. the local level as shown by the results of the clinical interventions and public health programmes) and 2) in different domains (e.g. transport, health, agriculture, education.)

7.1.4. Option D – Strengthen regulatory approach

Option D results from the conclusion that voluntary approaches do not or will not work for the EU. This is the option of choice if there is evidence that voluntary approaches alone are ineffective, or if the speed with which obesity is rising convinces that more dramatic efforts are needed now.

However, the risk to approaching option D too quickly is that this may pre-empt any opportunity for progress under option C. The advantage of pursuing legislative approaches from the beginning is that no time is wasted on voluntary actions that prove ineffective or inadequate to meeting the objectives set out. This is an important consideration in relation to an issue such as obesity for which prevalence is rising so quickly. The experience of the USA would caution against allowing voluntary approaches to continue for too long without regular checks on their and reassessment of the need to consider stronger measures.

However, this has to be set against the traditional criticism of regulatory approaches that they are slower to set up and therefore to observe results, compared to voluntary approaches which are considered to be faster, more responsive and more flexible.

Option D would ensure for instance minimum standards (for example in relation to marketing practice) for consumers across the EU for example for foods high in fats,

salt and sugar or allow for economic operators to take action without fear of this negatively influencing their competitivity for example by considering minimum standards in relation to reformulation of certain foods.

7.2. Comparing the economic, environmental and social impact of options

7.2.1. Environmental and social impacts

It is difficult to compare the options in terms of their environmental and social impact given the level at which actions and policies are operating, and the complexity of factors contributing to diet and physical activity levels at population level. There are also considerable time lags involved. An action to strengthen partnerships at the EU level today might be expected to contribute to the effectiveness of actions at Member State level over the next 1-5 years. Following which an observable impact on weight levels may take 5-10 years to become apparent, and a longer term time frame, in the region of 20-30 years, would be needed to observe a corresponding impact on health status. Even when such impacts are measurable, determining the change directly attributable to Community level actions will be highly complex given the range of factors that will contribute over the time period, as Figure 6 and Figure 8 describe.

That said, as far as the longer term impacts are concerned, the individual options can be compared from the perspective that C and D are more pro-active options. Consequently if they are effective in improving diet and physical activity levels, C and D should both result in greater positive impacts in these areas if they are effective in improving diet and physical activity levels, and as a result of the link between these lifestyle factors and social and environmental concerns as described in section 6.

Options C and D aim to cover the same ground in terms of actions and policy areas but the difference between them is that in some areas they pursue different approaches (voluntary versus regulatory). As far as environmental and social impacts are concerned there is no data available to indicate that they would differ from one another.

The difference in economic impact of options C and D *can* be assessed given the impact that the different approaches can be expected to have on industry actors. A key assumption of option C is that, as a voluntary approach, it has the potential to be as effective as option D in terms of impact on nutrition and physical activity levels. The flexibility that comes with a voluntary approach, in allowing companies to choose their own participation, may be less costly especially to smaller companies.

The rationale for choosing C over D is both the assumption that it can be as effective (based on the transfats experience in Denmark and Norway) and that by pursuing a voluntary approach its impact on industry will be limited to those companies that have determined that participation is beneficial to their business in the long run. Furthermore, the legislative route can be restrictive to industry in an ever changing market and hindering innovation, with potential market opportunities having to wait until the legislation has "caught up".

In the IA, we have already stated that voluntary approaches allow for "win-win" opportunities to be exploited. Hence the costs to industry of participation (such as

reformulation etc) will have been assessed by them as costs worth bearing in the interests of the business: for example, in that they may yield revenue from the opportunity to restructure their business towards a healthy brand portfolio, which have been shown (reported in the IA) to be a fast growing part of the sector; or that they are necessary actions to ensure continued consumer confidence and trust; or that they will make the business more attractive to investors (for which a company healthy eating index is now being created in some markets – such as the UK.)

The costs and shortcomings of option D include costs to all industry actors required to comply with legislation (regardless of whether there were win-win opportunities).

- For example, regulation for the reformulation of certain foods across the board could harm the SME sector who may have difficulty meeting the costs associated with reformulation technology and product development to ensure consumer acceptance.

- Bans on the advertising of foods high in fat, salt and sugar (HFSS) are likely to have a negative impact on the revenues of the various media in which these adverts are placed, at least in the short term. For example, the UK television regulatory body OFCOM calculated that its ban on HFSS advertising around programmes where children form most of the audience will initially cost UK broadcasters £39 million (€57 million) in lost revenue per year. These losses translate into around 0.7% of total revenue of the domestic channels and up to 15% of revenues of children's channels.

7.2.2. Example of differences costs associated with options C and D: Reformulation

To illustrate the difference in costs between options C and D, it is useful to consider reformulation. This could be pursued with either a voluntary approach (option C) or under a legislative approach (option D based on food safety competences.)

There are costs attached to reformulation. For example, linked to the technology and time required to adjust the composition of the food (e.g. to reduce its salt or fat content) while still retaining consumer satisfaction with it. There may then be additional costs, for retailers, in ensuring that newly reformulated food products spend long enough on the supermarket shelves for customer loyalty to be maintained.

Larger companies, selling more product units, are likely to be find it easier to absorb the one off costs associated with developing the reformulation technology and achieving consumer re acceptance of the changed products. For smaller companies, these costs will be more of a burden.

Pursuing a regulatory approach would mean blanket requirements for all food stuffs of a certain category to be reformulated, regardless of the size of the company. Whereas, a voluntary approach will allow companies to determine their participation based on the interests of the business. Therefore taking a regulatory approach is likely to result in more costs to small to medium enterprises.

7.3. Summary comparison of policy options

As Table 2 sets out, there are a range of policy options that the Commission can take that can add value to the actions of Member States, and contribute to the objective to improve nutrition and physical activity levels, and reduce obesity and overweight. The decision to move forward on any of these actions indicates the choice of road map options A to D. Table 5 summarises the strengths and weakness associated with the four options.

Table 5: Summary of strengths/weaknesses associated with the four options

Option	Strengths	Weaknesses
A (Abandon)	**Resources released to focus on other public health priorities of the EU**	**No contribution at the EU level on a number of areas that influence diet and physical activity**
		Ignores requests by Council and Parliament
		No co-ordination of stakeholders, Member States left to engage independently
B (Status Quo)	**Current stakeholder actions (widely perceived to be positive) continues**	**No common strategic direction for all actors at the EU level**
	No new risks	**No promotion of stakeholder forums at MS and local levels**
		Missed opportunity for the Commission to help MS tackle the issue
C (Voluntary approach)	**Common framework for all actors**	**Costs of participation in additional meetings/networks for stakeholders (MS and private actors)**
	Developing policy coherence at Community level may be easier within the context of a comprehensive EU strategy	**Greater monitoring burden to participating**

	Opportunity to identify "Win-win" actions. Optional participation of industry actors based on the interests of the business and therefore costs restricted to fewer companies. **Opportunities for faster response**	**stakeholders linked to need to demonstrate the implementation of actions.**
D (Stronger legislative framework)	**Uniform EU wide response, and from all actors**	**Costs for a greater number of private actors** **May be disproportional if voluntary 'win-win' options alone are sufficient to tackle the problem.** **Longer timeframe to observe response.** **Legislation can become "out of date" in an ever changing market.**

7.3.1. The boundary test

Finally, the subsidiarity test is completed by the boundary test in which it should be established that the measures under consideration are proportional to the objectives. This impact assessment has established that the costs to the EU of non action are very great. The Paper, building on published academic studies, has estimated that overweight and obesity alone are costing the EU over €80 billion a year, a figure which does not include costs related to broader diet and physical activity issues. This figure will further grow as the prevalence of these conditions increases.

In comparison, the measures proposed have the potential to be highly cost effective. Option D is likely to be the most costly given that it would have an impact on private actors across the board regardless of size. However, estimates of these costs are not comparable with the benefits to EU society of tackling diet and physical activity. For example, in the UK research suggests that obesity costs England an estimated £2.6 billion (€3.8 billion) per annum. (This figure does not include the cost of overweight

or of ill health due to poor diet and low physical activity levels that is unrelated to weight gain.) In comparison, the costs associated with introducing TV advertising regulations were estimated to be €200 million from loss of advertising revenue.

Therefore, the evidence base would support a more costly intervention, but only on a somewhat precautionary basis.

7.4. The preferred option

Given the size of the problem as defined, and the range of actions at Community that can contribute, there is a clear rationale for a stronger response from the Community – indicating a choice of option C or D.

Option C is preferred over Option D given (i) indications that it may prove as effective as Option D, (ii) that as a voluntary approach it may yield faster results, and (iii) because the structure of the food industry is one where a few, large companies dominate and industry data indicates that these companies will benefit from implementing actions in this area.

On balance, we also believe that Option C will provide more benefits than the other options as it serves more to engage or invigorate active partnerships among a range of stakeholders. At present, many well-intended initiatives fail to exploit opportunities for concerted action that could benefit from complementarities and create much needed coherence and scale. Option C would best respond to improving this picture.

8. MONITORING AND EVALUATION

As stated in the EC Impact Assessment Guidelines (SEC (2005) 8 June 2005) the road map for monitoring progress should "set measurable indicators to cover both the quality of outcomes and the implementation process, and define plans for evaluation". The foreseen Commission White Paper on Nutrition and Physical Activity will include proposals to improve the monitoring of nutrition and physical activity health status, and actions at all levels, in particular in relation to obesity and overweight. Obesity prevalence will be a key indicator of progress in the EU.

To support macro level monitoring, the European Commission has developed a European Health Interview Survey (EHIS) which will become operational in 2007 and will put in place a harmonised approach to the regular collection of data on self reported height and weight data, performance of physical activity and frequency of consumption of fruits and vegetables. By 2010, the Commission plans to establish a European Health Examination Survey which will obtain objective information on a range of nutrition measures such as BMI, waist circumference, cholesterol level, hypertension in a randomly selected population across the EU. In addition, the Commission's statistical service launched, in 2006, a project to first identify and then develop for the EU appropriate indicators to monitor food consumption and public health outcomes related to nutrition.

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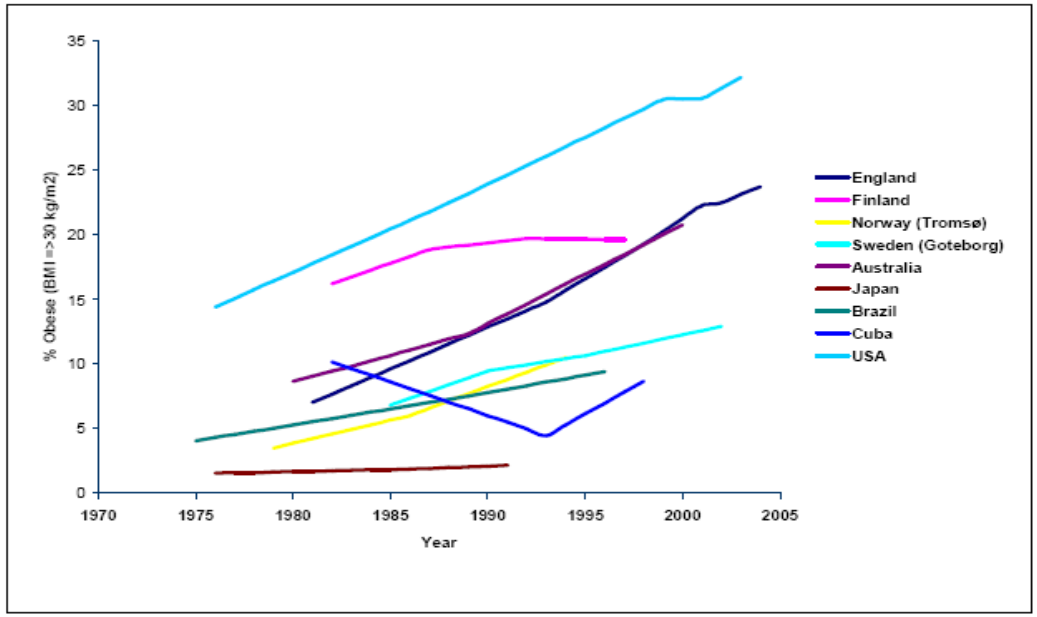
10. ANNEXES

10.1. Annex 1: Data from the problem definition section

Figure 11. Global trends in adult obesity, 1970–2005



(Source IOTF 2006)

Source: James et al, 2006: p. 19

Figure 12. Prevalence of overweight among school-aged children in selected countries of the EU27, based on surveys 1958-2003

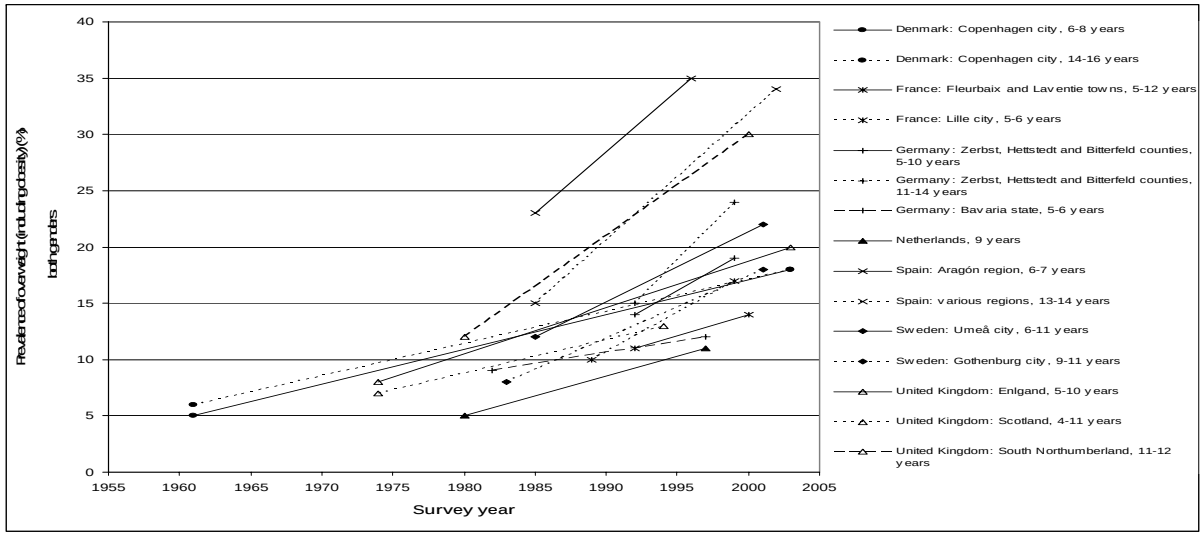


Figure 13: Trends in childhood overweight and obesity from England (source: IOTF)

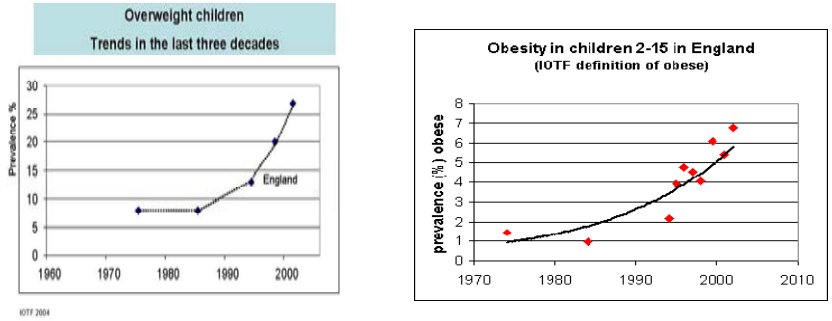


Figure 14. Prevalence of overweight (pre obese) and obesity among 13-year-olds and 15-year-olds (based on self-reported [26]data on height and weight) in selected countries of the EU27, according to the 2001-2002 Health Behaviour in School-aged Children Survey

[26] "Self reported" indicates that people have been asked for their weight measurement. Studies show that when people self report their weight, they tend to underestimate it. Hence, prevalence of overweight and obesity on the basis of self reported surveys can be assumed to give an under-estimate of the true prevalence level.

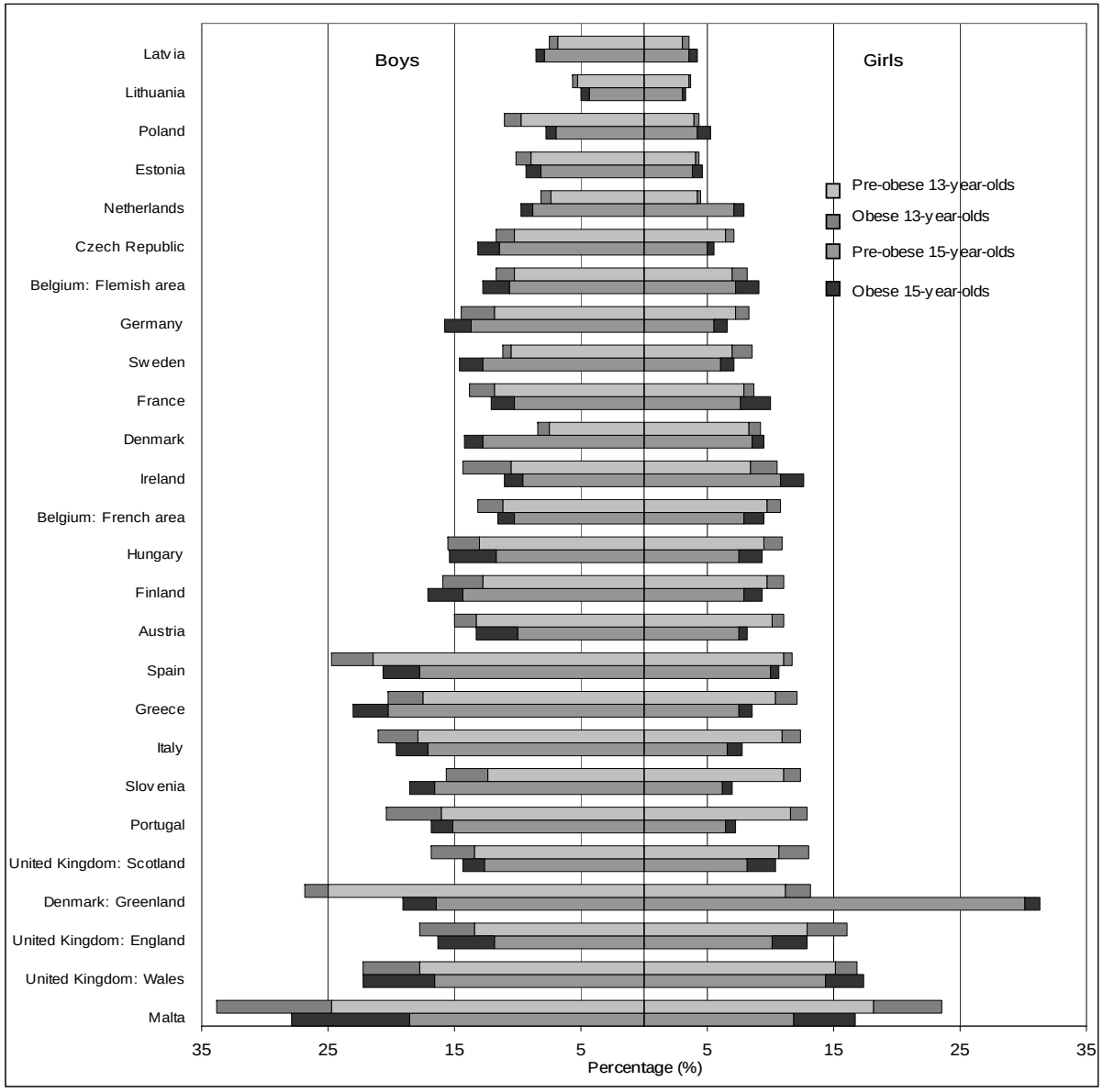

Boys
Girls
Latvia
Lithuania
Poland
Estonia
Netherlands
Czech Republic
Belgium: Flemish area
Germany
Sweden
France
Denmark
Ireland
Belgium: French area
Hungary
Finland
Austria
Spain
Greece
Italy
Slovenia
Portugal
United Kingdom: Scotland
Denmark: Greenland
United Kingdom: England
United Kingdom: Wales
Malta
Pre-obese 13-year-olds
Obese 13-year-olds
Pre-obese 15-year-olds
Obese 15-year-olds
35
25
15
5
5
15
25
35
Percentage (%)

Table 6. Obesity prevalence ranking of European Countries, 2005 and 2020

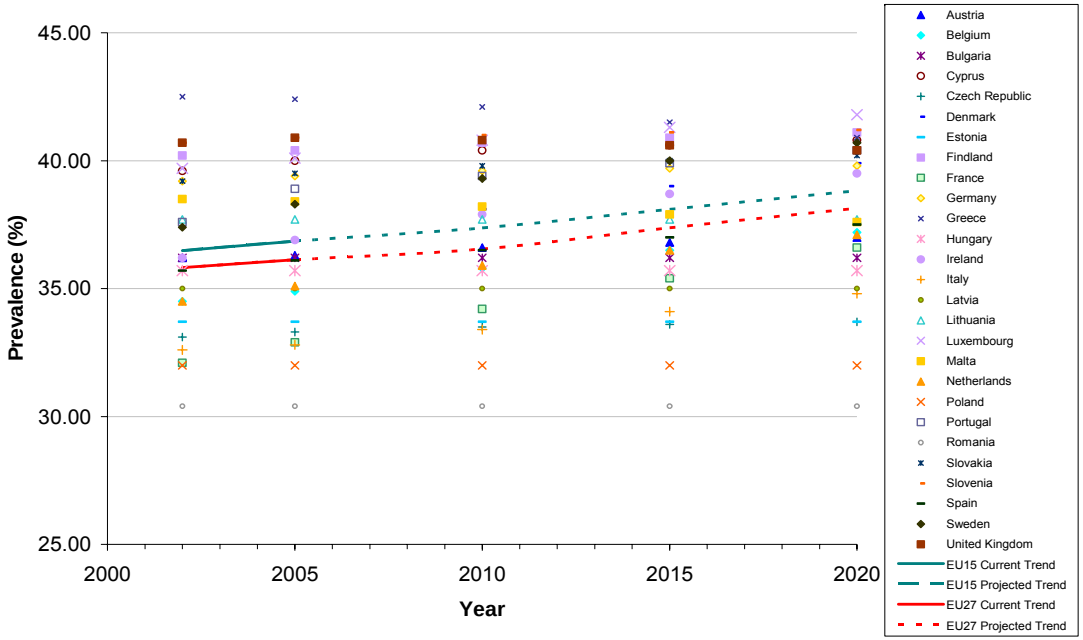
Country	2005 Rank	2005 prevalence	2020 Rank	2020 prevalence
Malta	1	30.3	1	36.3
Greece	2	26.1	2	32.9
United Kingdom	3	22.9	3	29.2
Austria	4	20.8	5	25.9
Germany	5	20.7	4	26.3
Czech Republic	6	19.6	7	24.4
Slovenia	7	18.9	6	24.6
Finland	8	18.3	8	23.9
Bulgaria	9	18.0	14	18.0
Slovakia	10	16.8	9	22.5
Cyprus	11	16.2	10	22.0
Hungary	12	15.9	17	15.9
Spain	13	15.7	11	20.5
Poland	14	15.5	19	15.5
Lithuania	15	15.4	20	15.4
Portugal	16	14.9	12	20.0
Luxembourg	17	14.1	13	19.3
Italy	18	12.7	15	16.7

Latvia	19	12.3	24	12.3
Belgium	20	11.4	18	15.7
Sweden	21	11.4	16	16.0
Netherlands	22	10.9	21	15.3
Ireland	23	9.7	22	14.0
Denmark	24	8.9	23	13.1
Romania	25	8.7	26	8.7
Estonia	26	8.5	27	8.5
France	27	7.2	25	10.5

Source: WHO Infobase

To gain further insights, the IA background report also analysed the WHO data on *overweight*, i.e. BMI is between 25 and 30 (see Figure 15). The WHO estimated that the prevalence of overweight is much higher than the prevalence in obesity. For EU-27 as a whole, the adult overweight prevalence is 36.1% in 2005, meaning that that close to 150 million Europeans (excluding children) are marginally obese. Across the 27 Member States, adult overweight prevalence ranges from 30.4% in Romania to 42.4% in Greece. The standard deviation in prevalence is 3.1%.

Figure 15. Overweight in Europe: trend analysis



Source: WHO Infobase

Table 7 shows the prevalence and ranking of *overweight* in 2005 and 2020. In 2005, Greece is the country with the highest level of overweight, followed by Slovenia, United Kingdom. It is projected that Luxembourg will become the highest in rank in 2020, while Greece and the United Kingdom will drop to rank 4 and 7 respectively. However, the reduction in overweight in Greece and United Kingdom do not necessarily mean that the population becomes thinner. Quite the opposite, it could mean that many people who were marginally obese are expected to become clinically obese.

Table 7. Overweight prevalence ranking of European Countries, 2005 and 2020

Country	2005 Rank	2005 prevalence	2020 Rank	2020 prevalence
Greece	1	42.4	40.9	4
Slovenia	2	40.9	41.2	2
United Kingdom	2	40.9	40.4	7
Finland	4	40.4	41.1	3
Luxembourg	5	40.1	41.8	1
Cyprus	6	40	40.8	5
Slovakia	7	39.5	40.2	9
Germany	8	39.4	39.8	11
Portugal	9	38.9	40.4	7
Malta	10	38.4	37.6	14
Sweden	11	38.3	40.7	6
Lithuania	12	37.7	37.7	13
Denmark	13	36.9	39.9	10
Ireland	14	36.9	39.5	12
Austria	15	36.3	37	18
Bulgaria	16	36.2	36.2	20
Country	**2005 Rank**	**2005 prevalence**	**2020 Rank**	**2020 prevalence**
Spain	17	36.1	37.5	15
Hungary	18	35.7	35.7	21

Netherlands	19	35.1	37.1	17
Latvia	20	35	35	22
Belgium	21	34.9	37.2	16
Estonia	22	33.7	33.7	25
Czech Republic	23	33.3	33.7	25
France	24	32.9	36.6	19
Italy	25	32.8	34.8	23
Poland	26	32	32	26
Romania	27	30.4	30.4	27

Source: WHO Infobase

Figure 16 compares the trend of obesity prevalence with the trend of overweight prevalence. As shown, the trend line for obesity is steeper, meaning obesity is growing at a faster rate than overweight. This problem seems to be particularly acute in EU-15.

Figure 16 : Comparing the trends in obesity with trends in overweight

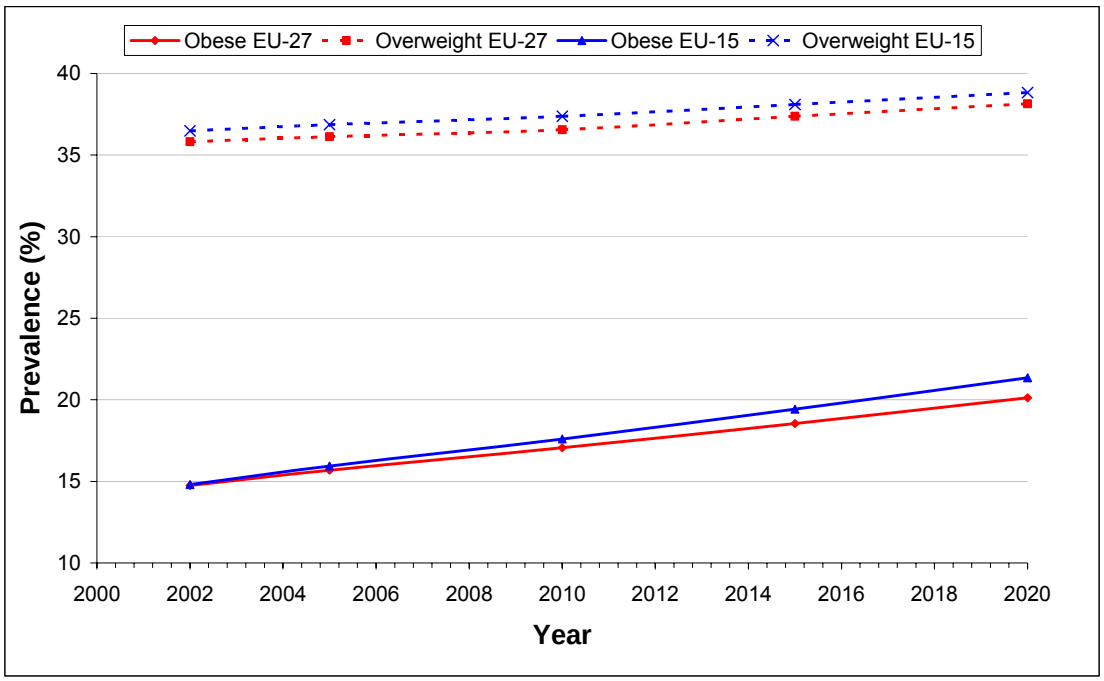
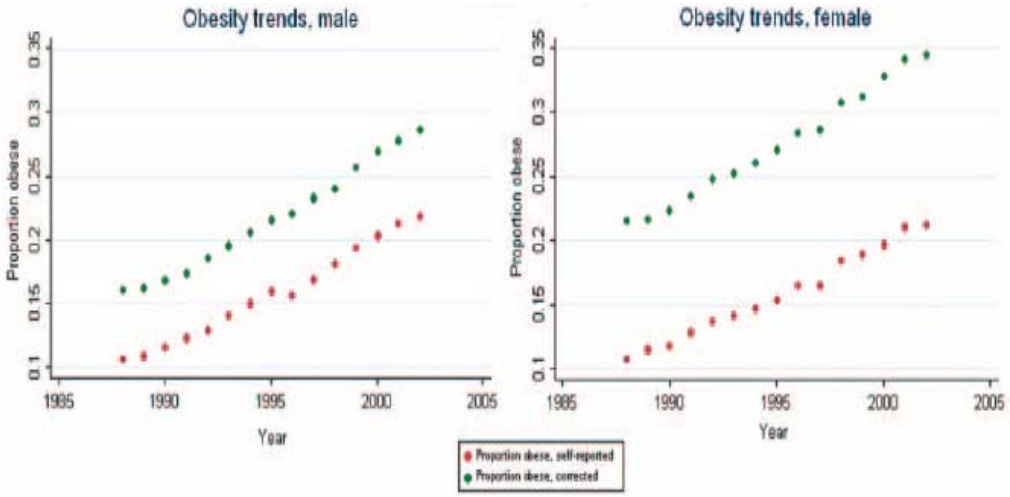


Figure 17: Obesity trend in the US

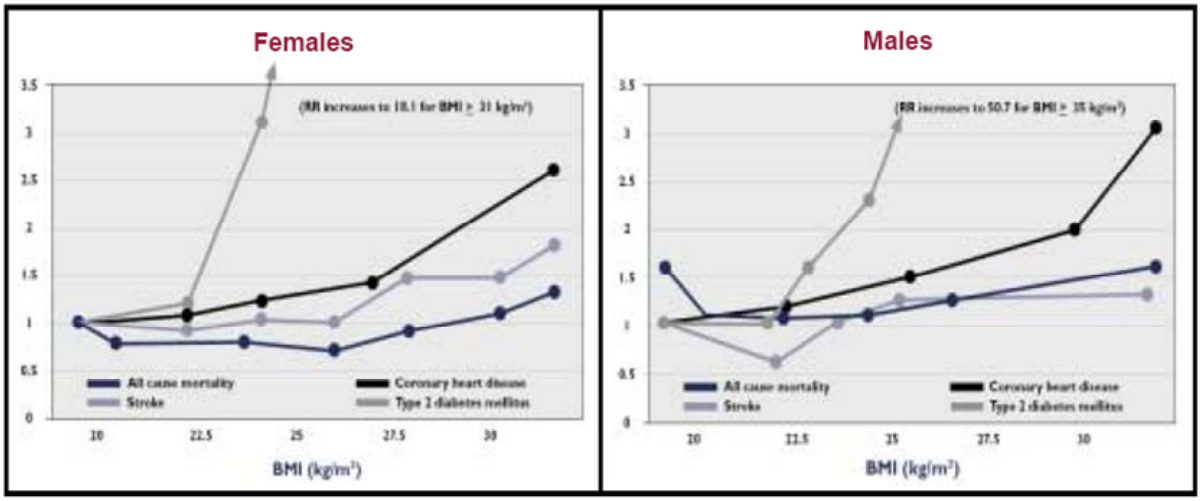


Source: Adapted from: Ezzati et al, 2006

Figure 18 describes the association between relative mortality risk and body mass index in a sample population from the US.

Figure 18. Age-adjusted relative mortality risk by BMI for US Sample Populations

FIGURE 3-2: AGE-ADJUSTED RELATIVE MORTALITY RISK, BY BMI FOR US SAMPLE POPULATIONS



Source: NHMRC Obesity Guidelines

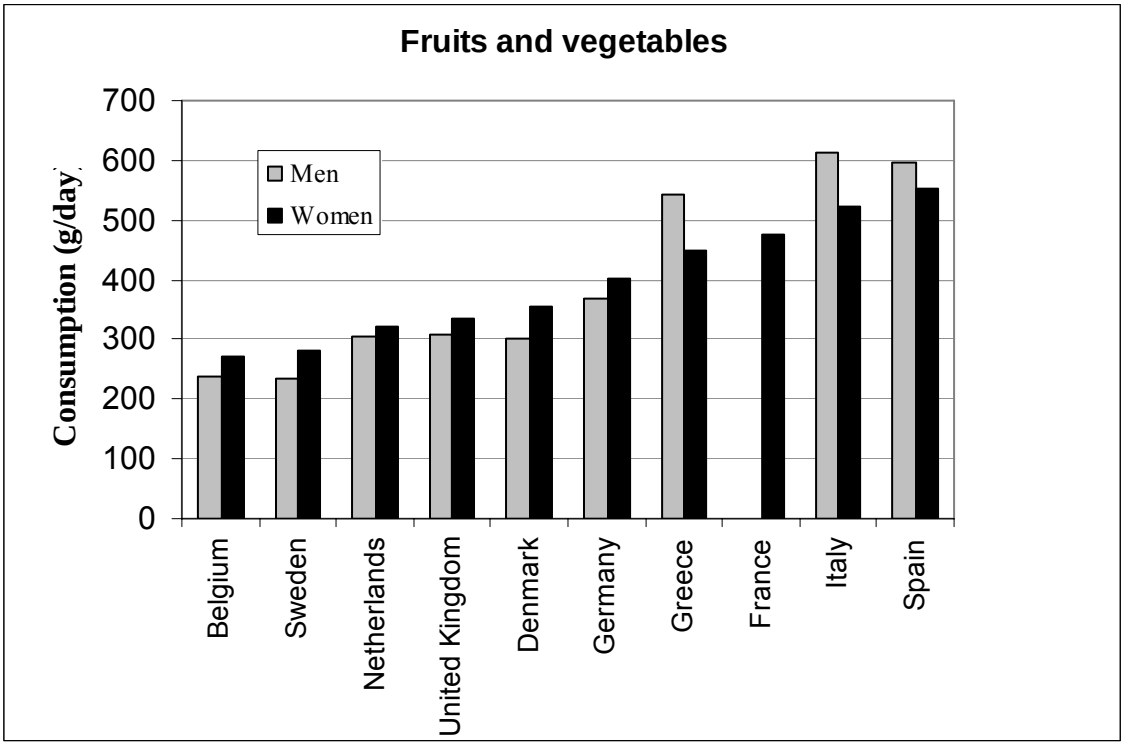
Table 8 The possible effects of dietary intake and body composition on non-communicable diseases (source: Popkin et al, 2001 p23)

Dietary factor	Mechanisms	Health outcomes
Excess energy intake ↑	Adipose tissue development ↑, metabolic changes	NIDDM ↑ (a), CHD ↑ (a), hormone-dependent (e.g., breast) or GI (e.g., colon andrectal) cancers ↑ (a), osteoarthritis ↑ (a), gallbladder disease ↑ (a)
Total fat ↑	Passive overconsumption, IR ↑	NIDDM ↑ (b), CHD ↑ (a), prostate cancer ↑ (b), breast cancer ↑ (c), colon and rectal cancer ↑ (b)
Animal fat ↑	Unclear, fat metabolism byproducts	Colon cancer ↑ (b)
Saturated fat ↑	TC ↑, LDL-C ↑, TG ↑, HDL-C ↓	Atherosclerosis ↑ (a), CHD ↑ (a), hypertension ↑ (b), NIDDM ↑ (b)
Trans fatty acids ↑	LDL-C ↑, HDL-C ↓, TC ↑, immune system ↓	Cancers ↑ (d), CHD ↑ (c)
Monounsaturated fatty acids ↑	LDL-C ↓	Cancers ↓ (c), CHD ↓ (b)
Polyunsaturated fatty acids ↑	HDL-C ↑, some are antiinflammatory	Cancers ↑ (b), CHD ↓ (b)
Sodium ↑	Abnormal renal function ↑, disturbed electrolyte balance ↑	Hypertension ↑ (a), stroke ↑ (a)
Antioxidants ↓	Oxidize LDL-C, change functions	CHD ↑ (b)
Dietary fiber ↓	TC ↑, HDLC ↓, IR ↑, TG ↑	CHD ↑ (b), NIDDM ↑ (b), stroke ↑ (c), colon cancer (c) ↑
Fetal malnutrition/ stunting ↑	Central adipose tissue ↑, IR ↑, metabolic changes	NIDDM ↑ (b), hypertension ↑ (b), CHD ↑ (b)
Fruit and vegetable ↑	Prevent oxidization LDL-C, fiber ↑	Stroke ↓ (b), cancers ↓ (a)

The relationships between dietary factors and health outcomes are categorized as (a) well-established; (b) fairly well-established but data not complete; (c) still under debate; and (d) indicative data to date. Epidemiological studies support much of what is presented here but the literature is controversial, especially with respect to mechanisms. This table omits the effects of reduced physical activity, which are most important in increasing obesity, reducing fitness, and increasing insulin resistance.

CVD = cardiovascular diseases; GI = gastrointestinal; HDL-C = high density lipoprotein cholesterol IR = insulin resistance; LDL-C = low density lipoprotein cholesterol; NIDDM = noninsulin dependent diabetes mellitus; TC = total cholesterol; TG = total glycerides.

Figure 19 estimated intake of fruit and vegetables selected countries in the EU (from individual based surveys 1992-2004)



Source: WHO, 2006

In addition, the European consumption levels tend to differ not only between the Member States but also with non-European countries (Figure 20)

Figure 20: Food consumption per capita and per year, 2003 (kg)

	Brazil	*China*	*USA*	*EU-15*	*France*	*Sweden*	*Italy*
Sugar & sweeteners	56	8	71	41	41	47	32
Vegetables	41	270	123	126	143	78	178
Fruit	96	50	113	117	95	115	131
Coffee	2	0	4	5	5	10	6
Meat	81	55	123	92	98	77	91
Butter	1	0	2	4	8	4	3
Milk (excluding butter)	118	17	262	255	275	378	252
Eggs	7	18	15	12	15	11	11
Fish and seafood	6	25	21	26	31	34	26

Source: FAO, Food Balance Sheet – taken from *Data & trends of the European Food and Drink Industry*, CIAA Report 2006

Table 9. Largest food and drink companies in Europe ranked by world sales in food products, 2003–2004

	Country	**Main products**	**Food sales (€ billion)**
Nestlé	CH	Multi-product	54.5
Unilever	NL/UK	Multi-product	26.2

Diageo	UK	Alcoholic beverages	13.7
Danone	FR	Multi-product	13.1
Cadbury Schweppes	UK	Beverages, confectionery	9.4
Heineken	NL	Beer	9.3
Parmalat	IT	Dairy, snacks, beverages	7.6
Scottish & Newcastle	UK	Alcoholic beverages	7.3
Associated British Foods	UK	Sugar, starches, prepared foods	7.1
InBev	BE	Beer	7.0

Source: Adapted from European Commission, 2006a

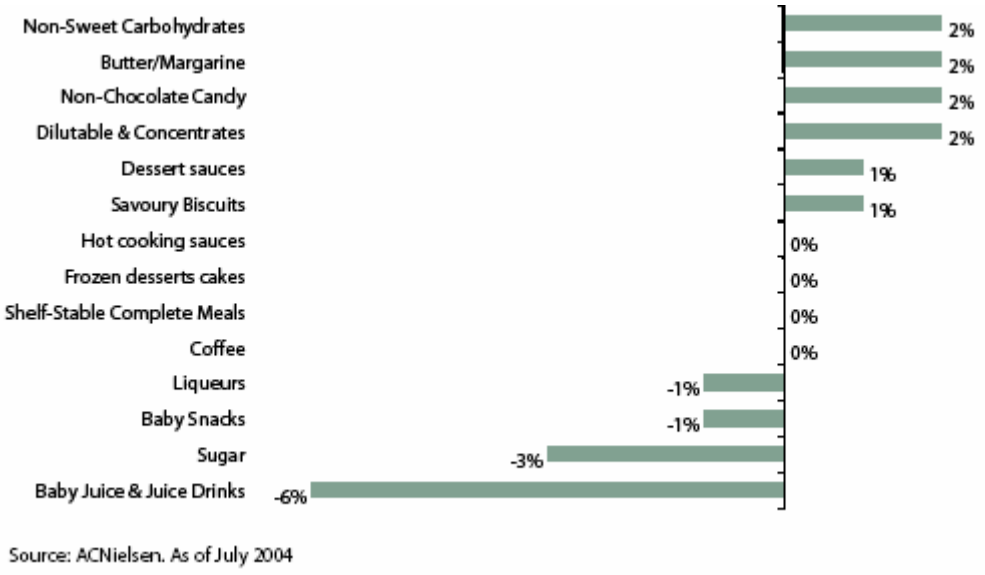
Table 10. The European food and beverage industry, 2001

Sector (NACE Rev.1)	**Total EU employment (000)**	**Total EU value added (€ billion)**	**Main contributor to value added, EU**
Meat	976.2	31.1	Germany
Fruit & vegetables	257.4	10.5	United Kingdom
Dairy products	396.2	17.5	France
Other food products	1860.6	65.1	Germany
Beverages	446.1	31.2	United Kingdom
Other miscellaneous food products	455.2	20.4	United Kingdom
Sector (NACE Rev.1)	**Total EU employment (000)**	**Total EU value added (€ billion)**	**Main contributor to value added, EU**

Food & beverage industries	4386.2 (13% of total manufacturing)	176.3 (11% of total manufacturing)	Germany
Manufacturing	34006.5	1534.7	-
- Manufacture of basic metals and fabricated metal products	4836.6	193.9	
- Manufacture of food products and beverages	4386.2	176.3	
- Manufacture of electrical and optical equipment	3891.3	181.8	
- Manufacture of machinery and equipment	3624.8	167.6	
- Manufacture of transport equipment	3010.8	168.6	

Source: Eurostat (Structural Business Statistics)

Figure 21: Lowest growth categories globally, 2003-04



Data from AC Nielsen, reported in Langlois, 2005

10.2. Annex 2: Possible Community Actions further described

Awareness raising campaigns

The rationale behind awareness raising campaigns is that they can shape the preferences of the consumer (much in the same way as advertising or marketing campaigns.) With public funds, awareness raising campaigns can promote messages such as the need to eat more fresh fruit and vegetables, to cut down on salt intake, or to take more physical activity.

Given that they have been shown to be effective in improving knowledge and changing attitudes about eating, and physical activity, awareness campaigns can be a key action for the European Union. For example, the UK's National Institute for Clinical Effectiveness has recently conducted a review of the evidence of effectiveness of awareness raising campaigns on reducing body mass, increasing levels of physical activity and changing diets. The review states, "There is a body of evidence that promotional campaigns, including media interventions, can increase awareness of what constitutes a healthy diet".

Minimal negative impact on other stakeholders are envisaged by awareness campaigns. The food industry, for example, expresses its support for such actions on the grounds that it tackles the issue from the perspective of consumer demand, which can then shape the marketplace for food.

Develop the physical environment

Changing the transport system to alter the relative attractiveness of different transport modes provides an opportunity for people to incorporate more physical activity on a daily basis. Journeys solely by non-motorised transport provide greatest activity, followed by public transport journeys (since these almost certainly involve walking at both ends or for connections), followed by car transport where the car is not parked close to the start or end of point, and finally door-to-door car transport.

Data exists to how current journeys break down into the different modes according to country. The ADONIS study gives data for 26 cities in 4 countries and we can that there is substantial variation between different cities in the same country. For example;

- The Netherlands: walking varies between 4% and 23% of trips, and cycling between 28% and 43% of trips.
- Spain: a range of 33% and 66% for walking with <1% on cycling.
- Denmark: a range of 8% to 15% for walking, and 18% to 35% for cycling
- Belgium: a range from 4% to 9% for walking, and 1% to 19% for cycling.

While there are a range of factors that may cause such variations in physical activity, transport policy and land use are two important aspects.

There are a number of Community actions that can contribute to shaping the physical environment, such as structural funds or transport programmes such as CIVITIS.

The impact of policies to develop the physical environment to promote healthy lifestyles, such as the development of transport policy, are linked to the health benefits of walking and cycling as physical activity. According to Wardlaw (2000), "life extending health benefits of cycling are taken to compensate the risks involved 10-20 times over."

A Norwegian study on the costs and benefits of cycling reported that "a physically inactive person who starts to walk or bike to walk instead of using car or public transport, gives an economic benefit to society of 22,000 to 29,000 NOK (approx 3,000 to 4,000 euros) according to the analysis. If the person is physically active prior to the change from motorised transport to walking or cycling, the benefit is 4,000 to 11,000 NOK (approx. 500 to 1,500 Euro).

Align food production incentives

The rationale to consider food production, and the incentives that surround it, is based on the way in which food supply influences food consumption. Lang et al (2004) argue that Europe has in place a model of food production that was set up in a post war era of under-nutrition, and when food security (self sufficiency in food production) was an important national consideration.

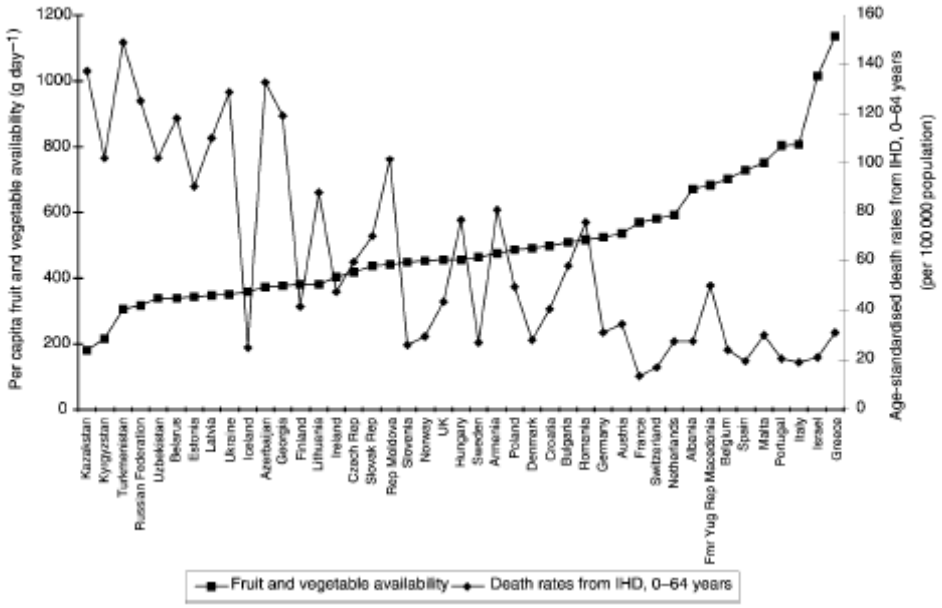
The situation in Europe has changed in the last 50 years, and obesity has become the greater threat. The Common Agricultural Policy (CAP) is an important driver of food production in the EU through its system of subsidies.

Extensive efforts have already been made by the European Commission to reform the CAP with public health objectives in mind. Future reforms will provide further opportunities to develop coherence between agriculture, food and public health policy goals.

Basic economic theory asserts that the level of production of certain foods influences their supply onto the market, their price and as a result the level of demand, and therefore their consumption. There is macro level impact data associating changes in consumption of particular foods with changes to mortality and morbidity status.

One example is presented below. Figure 22 describes the relationship across Europe between availability of fruit and vegetables at national level, and the prevalence of ischaemic heart disease, see Figure 22.

Figure 22. Relationship between per capita availability of fruits and vegetables and age-standardized death rates from ischemic heart disease in the European Region before age 65, per 100.000 population.



Source: Pomerleau et al, 2003: p. 455

Product reformulation

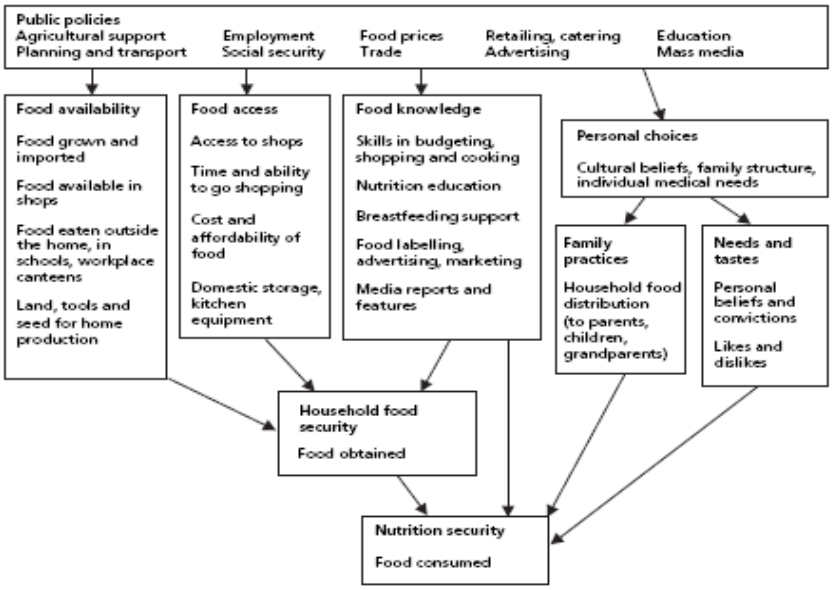
Reformulation describes the practice whereby food manufacturers alter the composition of their food productions to reduce the levels of "unhealthy" nutrients, particularly fat, sugar and salt. This represents an important component to a strategy to improve nutrition because it does not always rely on consumer behaviour change. Consumers can continue to purchase and eat their usual products from the food manufacturers.

Reformulation of foods can be pursued through either voluntary or legislative approaches based on Community food law. However, these approaches should not be considered as mutually exclusive: one can complement the other. One rationale for voluntary approaches is the opportunity for win-win gains; that is, instances where it is relatively simple to remove either fat, salt or sugars without this causing a significant difference in demand for the product.

Advertising and marketing of foods high in fat, salt and sugars to children

Advertising and marketing form part of the landscape for influences on consumer food choice, and these are more fully described in **Error! Reference source not found.** below.

Figure 23. Influences on food choice



The extent to which advertising and marketing influence diet has been much explored. For example, Robertson et al (2004) and Livingstone (2004) provide an outline of the effectiveness of advertising to children. Another body of the literature (e.g. Bjurstrôm, 2000; Goldberg, 1990; Gorn and Golberg) have studied the way in which food preferences are shaped by commercials. Borzekowski and Robinson (2001) have provided quantitative evidence on the subject: "experiments have shown that exposing children aged 2-6 years to 20-second commercials significantly influence their food preferences".

Another aspect is that food advertising (especially of energy-dense food) has been reported as the largest category of products advertised to children and young people in almost all countries, with the great majority of food marketing occurs by TV advertisements (European Heart Network, 2005). The need to place advertising within a framework of influences though is highlight by Livingstone (2004) who evaluated the key claims in recent literature on television advertising to children argues that "there is a modest body of fairly consistent evidence demonstrating the direct effect of food promotion on children's preference, knowledge and behaviour...but it explains only a small amount of the variance". Other factors included exercise, trends in family eating habits inside and outside the home, parent demographics, school policy, public understanding of nutrition, food labelling, and other forms of food promotion (British Medical Association, 2005).

For governments, reduction in TV advertising of high fat and/or high sugar foods and beverages directed at children (up to the age of 14 years) is regarded as a highly cost effective intervention. For example, a study by the Australian Department of Health estimated that the intervention would save up to 40,000 DALYs[27] in Australia in 2001, making it the most effective of the interventions analysed in the study. From a

[27] Approximately 15,000-60,000 with 95% confidence interval.

government perspective, the costs of the intervention are negligible, making the intervention cost-effective and even cost saving.[28]

James et al (2006) describe the results of a study performed by Ofcom (the regulatory agency in the UK) regarding exclusion of TV advertising prior to 9PM. Ofcom found that this measure would remove 82% of recorded advertising impacts on all children aged 4-15 years and 89% of the impacts on children aged 4-9 years. In addition, the social and health benefits were presented, based on estimates of the UK Foods Standards Agency: the benefits of exclusion of advertising of food and beverages containing high fat, sugars and salt could be in the ranges of £53 million to £204 million or £245 million to £990 million per year depending on how the value of life is estimated. On the other hand, the potential loss of advertising revenue could exceed £200 million, which is 2.5% of revenue. According to Ofcom this loss outweighed the future health costs avoided potentially approaching £1 billion a year.

A review of EU Member State positions carried out by the German government, in advance of their conference on Nutrition and Physical Activity in Badenweiler (25-27 Feb 2007) showed that there is a range of national positions on this topic. And this picture is changing rapidly. For example, the UK has very recently introduced new rules on both the content of advertising campaigns, and on how these are screened on television. For example, adverts for foods high in fat, salt and sugar cannot be shown around programmes where a high proportion of the audience are estimated to be children under 16.

Consideration for whether to pursue a voluntary or regulatory process can take into account a study by Hawkes (2005) which considered the advantages and disadvantages of the voluntary approach to food advertising. As with regulation, the functioning of self-regulation systems varies between countries.

Hawkes mentions that self-regulation can assist in the control of clearly deceptive and misleading food advertisements targeted at children but that it cannot (at this moment) control the quantity and location (i.e. numerous times and places), or emotional power of advertising (e.g. depicting success). This means that self-regulation systems are currently concerned with the content of individual marketing campaigns, which is justified by its aim (i.e. to effectively communicate brand identity). However, when addressing a public health concern as obesity, self-regulation should focus on the cumulative effect of all forms of promotional activity in all locations on children's behaviour and diets. Examples of guidelines for self-regulation include:

- time-period restrictions (e.g. during times when large numbers of children are watching) of child-targeted advertising of foods fitting a certain nutrient profile
- no branded promotional activity in specific locations (e.g. schools)
- no targeting of certain products at children (e.g. carbonated soft drinks)

[28] We emphasize that intervention costs to *policy* are negligible. On the other hand, the measure imposes costs to industry (see e.g. Langlois, 2005).

- restrictions of certain marketing practices used to target children (e.g. toys)

- restrictions on use of celebrities and cartoons (Hawkes, 2005).

However, the EU Platform indicates that there is currently some movement occurring in the voluntary picture for advertising practice in Europe. For example, commitments in the framework of the EU Platform have shown that there is a trend in Europe for the minimum age for targeted advertisements to be raised. This includes Mars and UNESDA who have recently committed to no longer target children under 12 years of age. An advantage of self regulation is that it may be able to reach forms of communication not currently covered by existing legislative frameworks, such as the Commission's Audio Visual Services Directive currently going through co-decision.

An argument for the need for an effective approach (whether by voluntary or regulatory methods) should consider the high and rising dissatisfaction in the EU with advertising of foods high in fat, salt and sugar. According to recent Eurobarometer, 70% of parents wanted less advertising in 2003 and 80% wanted less in 2006. A factor that argues for a more uniform approach within the EU is that countries where regulatory bans on advertisements to children do exist, such as Sweden, are undermined by satellite channels broadcasting such advertisements from elsewhere in the EU.

Develop partnerships

The rationale for partnerships in this field relates to the awareness of the role of lifestyle to promote good health. Once there is the recognition that maintaining good health is about lifestyle, and not only about medical appointments and pharmacy prescriptions, then the environment for intervention moves to the community, or to our immediate living conditions. Accompanying this is the recognition of the role that non-health professional actors (from schools, businesses and youth clubs to food manufacturers and advertisers, to urban planners) play in promoting good health. In this way partnerships involving public and private actors underpin voluntary approaches to improving public health.

Partnerships can work at all levels from the local to the European level. DG SANCO set up the European Platform for action on Diet, Physical Activity and Health in March 2005. This is based on the objective to involve all relevant stakeholders (public authorities, health and consumer NGOs, industry, health professionals, retailers, media, educators).

Actions to further develop partnerships might be to encourage the creation of action based forums for diverse stakeholders across the EU.

There is significant evidence of the effectiveness of programmes at local level, see annex 3. Further action to develop partnerships within the EU could focus on encouraging action at all levels (local, regional, national and international). As public health interventions need to be implemented at local level in order to reach EU citizens, it is in fact particularly important to support and stimulate actions at local

level; local communities' involvement is required in order to assure such successful implementation.

Since the Platform's creation over 200 commitments for action to tackle nutrition or physical activity have been taken by its Members and these are publicly accessible on the Commission's website. Section **Error! Reference source not found.** describes some of the actions underway in the framework of the Platform. As far as the impact of these commitments is concerned, the Platform takes the issue of establishing its own added value very seriously and the Membership agreed a framework for monitoring their actions in September 2006. A second monitoring report of the Platform's actions will be published in March 2007. Further qualitative assessment of the Platform comes from interviews conducted with Platform Members at the time of the EU/US Transatlantic meeting in May 2007, which report widespread positive experience of the process.

Other actions

Given the speed with which overweight and obesity is increasing, it may also be justified to seek to take actions in areas where the weight of evidence is possible and to seek to strengthen the body of evidence in doing so, for example in tackling the issue of portion sizes.

10.3. Annex 3: Nutrient or food based recommendations in EU member States

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt
Austria	**Bread:** 250-350g /d (5-7 slices). 1-2 slices could be replaced by cereals **Rice or pasta:** 50-70g /d raw; 220-250g cooked **Potatoes:** 250-300g/ d	≥ 2 pieces or portions of fruit (250-300g) /d	Yes, not quantified	≤ 40g /d	Yes, but not quantified	250 ml /d LFM, 3 slices /d cheese (30g /slice)	**Fish:** 1-2 portions (150g /week) **Meat:** 2-3 times /week (150g /portion) **Sausages:** 50g /portion **Eggs:** 3 /week	Yes, not quantified
Belgium								

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt
	Belgium does not have any specific dietary guidelines							
Bulgaria			**Yes, not quantified**	**≤ 30% energy /d** **<u>Children</u>** **<u>≤10 years</u> ≤ 32 % energy /d).**	**≤ 10 % energy /d**			**≤ 6g /d**
Czech Rep	**3-6 servings/d:** **1 serving = 60g of bread, 120g of boiled pasta, rice,**	**3-5 servings/d vegetables** **2-4 servings/d fruit** **both preferably**	**<15g /d**	**≤30% energy /d**	**≤ 10% energy /d**	**2-3 servings /d** **LFM from 5 years and above**	**1-3 servings /d** **(1 serving = 80g)**	**≤ 6g /d iodised**

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt
	cereals	**fresh** **(1 serving = 100g)**						
Denmark	**Yes, but not specified**	**6 servings /d or 600g**	**<u>Adults:</u> <8Mj /d** **<u>Children:</u> <10% energy/d**	**≤ 30% energy/d**	**≤ 10% of daily energy intake (saturated, trans fatty acid)**	**500g/d LFMP,** **1 slice /d low fat cheese**	**Fish: 1-2 servings /d (200-300g/week)**	**≤ 5g /d**

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt
Estonia	**Eat mostly rye-bread and cereals** **10 portions /d**	**<u>Vegetables:</u> 3-5 portions /d** **<u>Fruit:</u> 2-4 portions /d**	**Sugar confectionery: 2-4 portions /d**	**3-5 portions /d:** **1 teaspoon of margarine, oil or butter, 2 teaspoons of low-fat margarine**	**3-5 portions /d:**	**Dairy: 2-4 portions** **(1 portion 200 ml milk, yoghurt, kefir)**	**<u>Meat-fish- eggs:</u> 2-4 portions /d** **<u>Fish:</u> 2-3 times /week** **<u>Eggs:</u> 2 /week**	**≤ 5g /d**
Finland	**Included, but not quantified**	**Included, but not quantified**	**≤ 10% energy /d**	**≤ 30% energy /d**	**≤ 10% energy /d (saturated, trans fatty acid)**	**Yes, but not quantified**	**Yes, not quantified**	**≤ 5g /d**

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt
France	**50-55% energy /d (200-250g) of CHO**	**4-5 portions /d (500g/d)**	**Not included**	**30-35% energy /d**	**Not included**	**Not included**	**11-15% energy /d**	**Not included**
Germany	**<u>Bread:</u> 250-350g/d (5-7 slices), 2 slices of whole grain** **<u>Rice or pasta</u>: 50-70g /d raw; 220-250g cooked** **<u>Potatoes:</u> 250-300g/ d**	**≥ 5 servings of vegetable and fruit /d**		**70-90g /d mainly of plant origin**	**Not included**	**250 ml of LFM or 90g of LF cheese /d**	**<u>Seafood:</u> 1 portion /week or 150-300g fish /week** **<u>Meat:</u> 300-600g/ week** **<u>Eggs:</u> 3 /week**	**Yes, not quantified, iodised**

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt
Greece	**8 servings /d:**	***3 servings fruit /d** *** 6 servings vegetables /d**	**1 serving of traditional Greek desserts /d**	**Olive oil should be preferred over other lipids**	**Olive oil should be preferred over other lipids**	**2 servings /d milk products. No specific recommendation on LFM**	**3 portions /d**	**Avoid salt and substitute with herbs**
Hungary	**5-9 portions /d of cereals (mostly whole grains)**	**5-9 portions /d vegetables and fruit**	**Yes, not quantified**	**Yes, but not quantified**	**Yes, but not quantified**	**Milk and dairy: 3-4 portions /d** **(500 ml milk /d**	**2-3 portions /d**	**Yes, not quantified**
Ireland	**≥ 6 portions /d:**	**≥ 4 portions /d**	**Yes, but not quantified**	**Yes, but not quantified**	**Yes, but not quantified**	**3 portions /d LFM, cheese or yoghurt**	**2 portions /d** **(3 servings during**	**Yes, not quantified**

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt
							pregnancy)	
Italy	**2-4 portions /d**	**3-5 portions /d**	**≤ 15% energy /d**	**1-3 portions /d**	**7-10% energy /d**	**Milk,, dairy products: 1-2 portions /d with LFM**	**1-2 portions /d**	**≤ 6g /d**
Latvia	**500g /d for adults**	**400g /d of local vegetables, fruit and berries**	**Yes, not quantified**	**Reduce fatty meat, butter and margarine intake**	**Not included**	**500-750 ml milk and fermented milk, and LFM**	**Yes, but not quantified**	**Yes, not quantified**
Lithuania	**5-11 portions /d of bread, grains and**	**Vegetables: 3-5 portions /d**	**Yes, not quantified**	**≤ 30% energy /d**	**Replace animal fats with vegetable oils**	**Yes, but not quantified**	**Use poultry, fish and beans instead**	**≤ 1 teasp /d**

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt
	potatoes						**of fatty meat**	
		Fruits: 2.4 portions /d						
Luxembourg	**4-5 portions /d**	**Vegetables 3-5 portions /d**	**Not included**	**"Eat less fat", not quantified**	**"Avoid animal fat", "Use vegetable oil", not quantified**	**≤ 2-3 portions /d LFM or dairy or 500 ml milk/d**	**2-3 portions /d,** **≤ 1serving /meal**	**Yes, not quantified, iodised**
		Fruit 2-3 portions /d						
Malta	**Complex carbohydrates**	**Included without quantifying**	**≤ 10% energy /d**	**≤ 30% energy /d**	**≤ 10% energy /d**	**Yes, but not quantified**	**Yes, but not quantified**	**5-8g /d**
	≥ 45% energy /d							

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt
	dietary fibre **≥ 30g/d**							
Netherlands	**Not included**	**-**	**Not included**	**20-40% energy /d**	**≤ 10% energy /d**	**-**	**-**	**≤ 9g/d**
Poland	**5-6 portions /d of cereals and potatoes**	**5-6 portions /d, preferably fresh**	**Not specified**	**20g/d** **(25-30% energy /d)**	**Not quantified, replace animal fat by vegetable oil**	**3-4 portions /d**	**1-2 portions /d**	**1 teasp /d**
Portugal	**Increase intake without quantifying**	**Included without quantifying**	**<20-30g/d of added sugar**	**≤30% energy /d**	**≤ 10% energy /d**	**Child/ adolescent: 500-600 ml whole or**	**Yes, but not quantified**	**≤ 6g / d**

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt
						LFM **<u>Adults:</u> 500 ml LFM** **<u>Pregnant/ post-menopausal women:</u> 750 ml LFM**		
Romania	**Not included**		**Not included**	**20-30% energy /d**	**≤ 15% energy /d**			**Not included**
Slovak Rep	**Increase intake of**	**Increase fruit and**	**Yes, but not**	**≤ 30% energy /d**	**≤ 10% energy /d**	**Yes, but not**	**<u>Fish + legumes:</u>**	**Yes, but**

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt
	cereals and cereals products, potatoes	**vegetables intake**	**quantified**	**Preferably of plant origin**		**quantified**	**≥ 1 /week**	**not quantified**
Slovenia	**Eat bread, grains, pasta, rice or potatoes several times /d**	**Eat a variety of vegetables and fruit, preferably fresh and local, several times per day (≥ 400g /d)**	**Yes, but not quantified**	**≤30% energy /d**	**Replace most saturated fats with unsaturated vegetable oils or soft margarines**	**Yes, but not quantified**	**Replace fatty meat and meat products with beans, legumes, lentils, fish, poultry or lean meat**	**< 1 teasp /d (6g /d)**
Spain	**6-10 portions /d:**	*** 3-5 portions /d vegetables (200-250g including potatoes)** *** 2-4 portions /d fruit (150-200g fruit; 100-150g fruit**	**Yes, not quantified**	**Use in moderation, not quantified**	**Not included**	**2-3 portions /d**	**2-3 portions /d**	**Not included**

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt
		juice)						
Sweden	**Included, but not quantified**	**500g /d**	**≤ 10% energy /d**	**≤ 30% energy /d**	**Ca. 10% energy /d**	**500 ml /d of milk, partly from cheese**	**Not specified**	**≤ 5g /d**
UK	**≥ 5 portions /d**	**≥ 5 portions /d**	**Yes, not quantified**	**Yes, but not quantified**	**Yes, but not quantified**	**Yes, but not quantified**	**2-3 portions**	**No but** **≤ 6g/d stated in COMA[29] report**

[29] Committee on Medical Aspects of Food Policy

Country	Carbohydrates	Vegetables and fruit	Sugars	Total Fat intake	Saturated fat (SF)	Low fat milk (LFM), milk products (LFMP)	Protein sources	Salt

10.4. Annex 4: Evidence of effectiveness/cost effective of interventions to tackle obesity

The table below presents the effects of interventions in the area of nutrition and physical activity. The table suggests that improved nutrition and physical activity resulted in weight losses from as low as 0.40 kg up to 6.71 kg after 12 months. According to Astrup (2001), a 3 kg change in body weight equates to about one BMI unit or about 5% difference in obesity prevalence at population level. Seen in this light the effects of nutrition and physical activity can be quite substantial and may be as high as reducing the BMI in individuals by 2 units or reducing prevalence at the population level by as much as 10%.[30]

[30] Effectiveness of interventions depends very much on changing behaviour for a time after the intervention is discontinued (NICE, 2006). In this respect, a measure such as diet and behavioural treatment in Table 13 may be relatively more effective in the longer run.

Table 1: Evidence on effectiveness of interventions aimed at adults

Area	**Interventions**	**Results on effectiveness**	**Original reference**
Physical activity	Exercise training	The weighted mean weight regain in randomised studies with or without exercise training was 0.28 and 0.33 kg/month, respectively. Adherence to prescribed exercise programme remains a big challenge. Before new methods to improve exercise adherence are found, the role of prescribed physical activity in prevention of weight gain remains modest.	Fogelholm et al, 2000
	Daily walking	The risk of death in men who walked less than 1 mile a day was 1.8 times that of men who walked more than 2 miles a day. A crude calculation of number needed to treat (NNT) indicated that for every five men who walk at least 2 miles a day, one fewer will die over 12 years compared with those who walked less than 1 mile a day.	Hakim, 1998
	Physical activity vs. no treatment	Relative weight loss at 12 months: 2 kg	Anderssen et al, 1996
	Physical activity vs. no treatment	Relative weight loss at 12 months: 2.9 kg	Pritchard et al, 1997
Nutrition	Consumption of an additional 14 g/day of dietary fibre for >2 days (in view of the fact that mean dietary fibre intake in the US is currently only 15 g/day (i.e. approximately half the American Heart Association recommendation of 25–30 g/day))	A 10% decrease in energy intake and body weight loss of 1.9 kg over 3.8 months. Obese individuals may exhibit a greater suppression of energy intake and body weight loss (mean energy intake in all studies was reduced to 82% by higher fibre intake in overweight/obese people versus 94% in lean people; body weight loss was 2.4 kg vs. 0.8 kg).	Howarth et al, 2001
	A 10% reduction in fat content	About 1 MJ reduction in energy intake and about 3 kg in body weight. At a population level, 3 kg equates to about one BMI unit or about 5% difference in obesity prevalence	Astrup, 2001

	Nutrition counselling in general practice, 6 sessions over 12 months	Additional weight change: between −5.63 kg and −6.71 kg per patient	Pritchard et al, 1999
Area	**Interventions**	**Results on effectiveness**	**Original reference**
	Behavioural weight loss programme: Group of patients randomized to 4 groups: − live contact that was video-taped (1) − live contact that was not video-taped (2) − television-delivered group watching the videotaped sessions (3) − control group (4)	Change in mean body weight in treatment group: (1) –4.13 kg (2) –4.49 kg (3) –4.22 kg Treatment groups decreased mean % of overweight significantly more than control.	Meyers et al, 1997
	600 kcal/day or low fat vs. no treatment	Relative weight loss at 12 months: 7.06 kg	Frey-Hewitt et al, 1990
	600 kcal/day or low fat vs. no treatment	Relative weight loss at 12 months: 0.40 kg	Jones et al, 1999
	600 kcal/day or low fat vs. no treatment	Relative weight loss at 12 months: 5.10 kg	Anderssen et al, 1996
	600 kcal/day or low fat vs. no treatment	Relative weight loss at 12 months: 5.70 kg	Pritchard et al, 1999
	600 kcal/day or low fat vs. no treatment	Relative weight loss at 12 months: 6.10 kg	Wood et al, 1991

	600 kcal/day or low fat vs. no treatment	Relative weight loss at 12 months: 13.40 kg	Stenius-Aarniala et al, 2000
Diet and behavioural treatment	Diet and behavioural treatment vs. diet alone	Relative weight loss at 12 months vs. diet: 8.19 kg	Wadden et al, 1989
	Diet and exercise (lifestyle modification) vs. pharmaceutical treatment (metformin)	Those at high risk of developing type II diabetes can delay and possibly prevent the disease by lifestyle modification. Diet and exercise were significantly more effective than metformin in the prevention of diabetes in glucose intolerant patients (39%). The lifestyle intervention group reduced incidence of diabetes by 58% as compared with the placebo. Metformin reduced incidence by 31% as compared with the placebo.	Knowler et al, 2002; Tuomilehto, 2001; Pan et al, 1997

Sources: NICE, 2006; WHO, 2003

The National Institute for Health and Clinical Excellence (NICE) has taken some of the clinical studies listed in Table 1 to calculate the cost-effectiveness of the interventions for the UK (NICE, 2006). Using UK data for the cost of staffing resources (e.g. dieticians, physiotherapists and clinical physiologists), NICE found that interventions in the area of nutrition and in particular group sessions with a dietician (assumption of one hour and a group of six) are the most cost-effective.

The cost-effectiveness calculation by NICE only includes the cost of the intervention. That is, it does not take into account savings related to a reduction of obesity, i.e. direct health costs and indirect labour-related costs. In an impact assessment, as in this evaluation, it is better to look at the effectiveness of interventions per se. From Table 1 this would appear to be nutrition counselling by a general practitioner. However, the various interventions described in Table 1 are very diverse in their set-up, so we cannot really compare the results.

Evidence was found of (cost)-effective *public health interventions* in the area of nutrition and physical activity (See table 2 below). The table indicates that public health interventions can produce savings in terms of direct health care costs and indirect savings due to reduced absenteeism. The total costs exceed intervention cost by up to 15 times.

In summary, evidence from the literature review shows that both clinical and public health interventions aimed at improving diet and physical activity are (cost)-effective compared to 'doing nothing'. However, the interventions described mainly involve interventions at a local and national level. The EC has no competence at the level of clinical and public health interventions. This is Member State sovereignty. To have an impact on the EU level, the Commission needs to revert to quite different interventions. The Green Paper describes several EU actions that are needed to combat the rising prevalence of obesity in the EU. The likely impact of two of these actions is described below in more detail.

Table 2. Evidence on cost effectiveness of interventions aimed at adults

Area	**Interventions**[31]	**Results on cost effectiveness**	**Original reference**
Physical activity	Four public health strategies to promote physical activity in adults	All the physical activities were cost-effective with cost-effective ratios ranging from US$9000/QALY to US$30,000/QALY.	Roux et al, 2004
Nutrition	Expanded Food and Nutrition Education Programme (EFNEP) – Nutritional counselling, Virginia Remark: EFNEP is a general dietary initiative, not targeted at obesity	Benefit–cost ratio ranges between US$2.66:US$1.00 and US$17.01:US$1.00, i.e. for every dollar spent between 3 and 17 dollars will be saved in future healthcare costs.	Rajgopal et al, 2002
Physical activity and nutrition	Washoe County School District (WCSD) Wellness Programme – 11 different programmes addressing weight management, water intake, fruit and vegetable intake, television viewing and various exercise activities	Programme participation was associated with a US$3,041,290 difference in absenteeism cost during 2001 and 2002, when compared with non-participants. This value is 15.6 times greater than the total cost for all wellness programmes during the same time period. These savings translate into a cost saving of US$15.6 for every dollar spent on programming.	Aldana et al, 2005

Source: NICE, 2006

[31] Strategies that can be implemented at local level, as opposed to national initiatives, are the focus.

Table 3. Evidence on cost-effectiveness of interventions aimed at children

Area	**Intervention**	**Results on cost-effectiveness**	**Original reference**
Nutrition	Family-based treatment of childhood obesity. Group and individual sessions (US)	After 12 months a decrease of 0.5% overweight units per US$100 in mixed treatment group and 1.4% decrease in group-only branch.	Goldfield et al, 2001
Physical activity and nutrition	Planet Health (US) – intervention focused on decreasing television viewing, decreasing consumption of high-fat foods, increasing fruit and vegetable intake, and increasing moderate and vigorous physical activity: - 310 school girls (aged <14 years) in five schools - third-grade students in nine elementary schools	Cost: US$14 per student; effect: 4.1 QALYs being saved. Society would save an estimated US$15,887 in medical costs and US$25,104 in productivity costs. This results in US$4305 per QALY saved and a net saving of US$7,313 to society. Cost-effectiveness ratio: US$190 per 1% body fat reduction. For students who attended at least 40% and 80% of the sessions, the programme resulted in an average 0.8% ($P < 0.01$) and 1.2% ($P < 0.01$) body fat reduction, respectively. This was achieved at a cost of US$634 and US$839 per student, resulting in a per capita net savings of US$88 and US$293, respectively.	Wang et al, 2003 Wang et al, 2004
Physical activity	Reducing television, videotape, and video game use	Compared with controls, children in the intervention group had statistically significant relative decreases in body mass index. Intervention vs. control change: 18.38 to 18.67 kg/m^2 vs. 18.10 to 18.81 kg/m^2, respectively; adjusted difference – 0.45 kg/m^2.	Robinson, 1999
Restricting food and drink advertising on commercial television channels (UK)	Policy options differing in use of a nutrient profiling scheme or not (in part. high in fat, salt and sugar); the time restriction on advertising; advertising versus sponsorship of programmes; age group (pre-school; 4– 9 or 4–15); and type of programme (for children, of a particular appeal to children)	Estimates of options range from minimum £11 million to a maximum of £168 million in terms of QALY.	Ofcom, 2006

10.5. Annex 5: Mandate of the Inter-Service Group for the Impact Assessment

Inter-Service Group for the Impact Assessment on a proposal for a Commission White Paper in the field of Nutrition and Physical Activity Policy

Mandate

Decision of the Commission

Based on calls from the Council in 2002, 2003, 2004, 2005 and 2006 preparations of a Community approach to improve population diet and physical activity levels, and to tackle the rising prevalence of obesity, Commission services started broad consultations in 2005 with the launch of its Green Paper. The Commission now intends to adopt a White Paper on Nutrition, Physical Activity and Obesity in 2007. The intention of the White Paper is to communicate the Commission vision for Community policies in this area, to make proposals for future action, to identify actions that could be undertaken by other European level organisations, and to identify ways that the Commission can support Member States.

Issue at stake

The worsening diet and decreasing levels of physical activity are a key public health and social concern across the Community. The rise in obesity prevalence is just one but highly visible indicator of this. The EU has an obligation to ensure that "A high level of human health protection shall be ensured in the definition and implementation of all Community policies and activities (Article 152 of the Treaty). Health is also mentioned in Articles 153 (Consumer policy), Article 175 (Health and environment), 137 (Workers safety), Article 3 (Health protection, and Article 95 (3) (Health, safety, environment and consumer protection).

According to the World Health Organization, a significant proportion of the burden of disease in the EU is attributable to lifestyle factors including diet and physical activity. The WHO estimates that an estimated 80% of heart disease, stroke and type 2 diabetes, and 40% of cancer, could be avoided if lifestyle factors were eliminated leading to an important cost to society in health and welfare, and to already resource constrained health systems, and to the economy overall through loss of European healthy life years. In addition, the rising prevalence in obesity may result in other future societal costs (for example in the USA, the Surgeon General identified a growing difficulty to recruit fire-fighters as a result of rising weight levels.)

The health impact on young people is particularly of concern. Recent surveys indicate that an estimated 18% of school children in the EU25 (14 million) are overweight, with more than 400,000 children entering this classification every year. Among the overweight children at least 3 million are estimated to be obese with this figure increasing by 85,000 every year. The international obesity taskforce estimates that without effective intervention, by the year 2010 the EU can expect to see the numbers of overweight and obese children rise by approximately 1.3 million children per year, of which the numbers of obese children will be rising by over 300,000 children per year.

However, obesity is just one highly visible and tangible indicator of worsening diets and physical activity levels. Poor diet and low levels of physical activity are risk factors for a number of serious, chronic conditions including coronary heart disease, stroke, high blood

pressure, type II diabetes and certain kinds of cancers (including breast, endometrial, colon, kidney and oesophagus).

In addition to the high levels of morbidity and mortality, long term chronic conditions cost organisations, and the economy as a whole, a great deal in terms of the loss of productivity associated with staff being on sick leave, taking early retirement, or from early mortality. For example, studies from the USA estimate that diabetes alone costs about $40 billion each year because of missed work days or other losses in productivity. In Europe, illness or disability accounts for up to 25% of retirements and in Ireland the proportion of labour participation is 61% lower for men with chronic diseases. Retaining a healthy older workforce will become more and more crucial for businesses as the population of Europe ages in the coming years.

Poor diet and low levels of physical activity contribute to inequalities within countries as the effect tends to be greater in less advantages social groups. It is also contributing to inequality between EU Member States as indices of poor diets/low levels physical activity (measured in terms of obesity prevalence for example) varies between EU MS. The response of MS to the issue is very variable.

Societal causes for the change in lifestyles is complex and a number of factors are considered to contribute such as changes in food consumption patterns towards higher density foods (this is linked to a whole host of factors such as supply of different foods onto the market as a result of agricultural policies, lost skills in food preparation, food marketing) and less physical activity incorporated into our daily lives (as a result of car use, television, computer use, less activity at school.)

There are both Community and transnational aspects related to diet and physical activity. EU policies have an influence on food labelling, food production and agriculture, consumer policy, internal market, transport policy, transfrontier TV advertising, taxation.

The Impact Assessment

The impact assessment on the foreseen White Paper in the field of Nutrition and Physical Activity will follow the set of logical steps recommended in the European Commission's Impact Assessment Guidelines SEC (2005)791. The impact assessment's depth is determined by the likely impact of the proposed action. For broad policy-defining documents the analysis generally will be rather broad in its problem description and objectives.

An external study on the impact of poor diet and low levels of physical activity on economic development will be conducted as a part of the Impact Assessment.

Consultation of interested parties

Gathering opinions and information from interested parties is an essential part of the policy-development process. The Commission launched a public consultation in December 2005, "Promoting healthy diets and physical activity: towards a European strategy for the prevention of obesity and chronic diseases".

Many stakeholders are currently involved in a partnership process for action through the EU Platform on Diet, Physical Activity and Health which was set up in March 2005 as a forum for different stakeholders (including the food industry, commercial communication sector, sports organisations, public health community, consumer groups, research groups) to discuss

approaches, identify common solutions and to commit to taking actions to contribute to these issues. This forum meets around every two months.

Nutrition and Physical Activity issues are also discussed with a Network of Member States experts which was set up in 2003 and meets on average twice a year.

Assess and analyse the problem

One of the main objectives with the Impact Assessment is to assess and analyse the social (health), economic and environmental problems related to poor diets, falling physical activity levels and the rising prevalence of obesity. This aim will mainly be achieved through a combination of;

- Collecting information and data from Member States, stakeholders and the research society
- An external contractor (RAND Europe) on the impact of poor diet, falling levels of physical activity and rise of obesity prevalence
- Expertise of the Inter-Service Steering –Group on IA

Identify objectives

In its strategic objectives, the Commission services have developed a tool called SANCO Scoping Paper. The tool is used to early identify key objectives, options and impact. This tool was used by SANCO to prepare the CLWP2006.

The main objectives identified for the strategy is to improve population nutrition and low levels of physical activity and therefore to reduce health conditions for which they are risk factors, and thereby contribute to higher productivity and a sustainable economic development in EU in line with the objectives set out in the Lisbon Strategy.

The objectives should be directly related to the problem and its root causes. The Steering group should identify the specific objectives in relevant policy areas (additional to public health) that might contribute the main objective for the strategy.

Identify the options

After the set of objectives the next step of the IA will be to establish which policy options and delivery mechanisms are most likely to achieve those objectives.

The policy options developed are;

A. Do nothing/no change at EU level.

B. A strategy at Community level along traditional lines, i.e. which seeks to further develop and set within a clear framework, Community level actions in the field of nutrition and physical activity.

C. (Option B) + a comprehensive nutrition and physical activity strategy that not only seeks to develop actions at Community level but also to galvanise action at local

and regional level within Member States, and through new channels that are not normally responsive or reachable using innovative approaches.

D. Purely regulatory measures, such as nutrition labelling, restrictions on advertising to children etc

The foreseen White Paper will be on nutrition and physical activity. The Steering Group should contribute with their expertise in order to select the most preferable option (to reach the main objective of the EU policy). Moreover the group should also identify tools/measures within their policy areas, besides public health, that could be used in order to reach this target.

Analyse the impact

The analysis of impacts involves trying to predict, across a range of different policy areas, the likely consequences of each option. The Steering Group should contribute with expertise on "who" will be affected by the policy options and over what timescale.

Compare the options

The next step in the work on the IA will be to compare the identified options to allow consideration of the strengths and weaknesses of the policy options in relation to the main objective, respecting the principles of proportionality and subsidiarity set out in Article 5 of the Treaty.

Evaluation

Within the framework of the Impact Assessment analysis, an attempt should be made to define some core indicators for the main policy objectives and to outline the monitoring and evaluation arrangements envisaged.

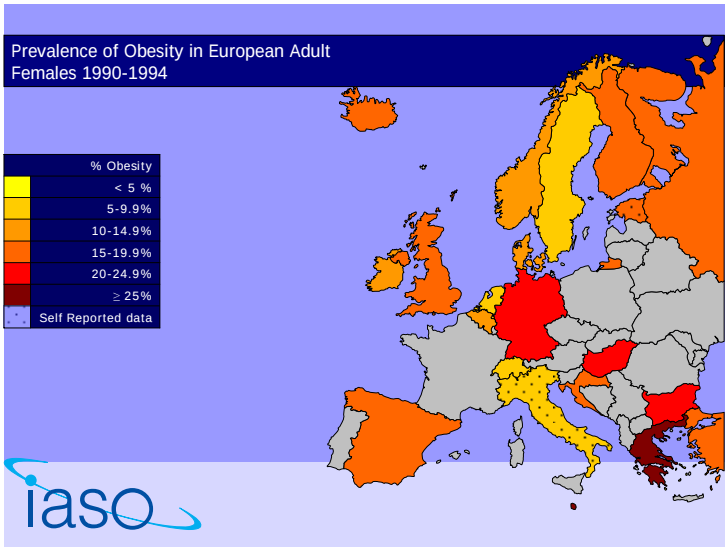
Timetable

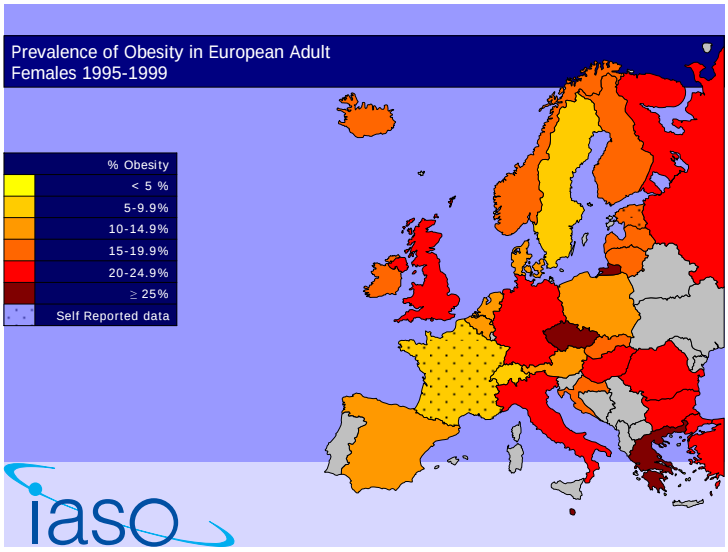
October 2006	Starting point work external contractor on impact on diet, physical activity and obesity impacts First meeting of Steering Group IA/sub-group of ISG on Health
November	Major stakeholder consultation event – the WHO Ministerial on Counteracting Obesity with the involved of the Commissioner and a range of other Stakeholders
November	Delivery of first "problem definition" part of the Impact Assessment Second meeting of the Steering Group IA/sub-group on ISG on Health (with external contractor to present "problem definition" data) Nov/Dec – Foreseen information Council

December	Work commences on Impact Assessment
January 2007	Receipt of the summary and main reports on the ex-ante evaluation by the external contractors. Third meeting of steering Group IA/Subgroup of Inter Service Group on Health Draft Communication for Intra-SANCO consultation and completion of IA Launch of CIS
February	Translation
March	Adoption by the College

10.6. Annex 6: Further data on prevalence of obesity in Europe

Figure 24: Adult female prevalence of obesity in Europe, 1990-2005





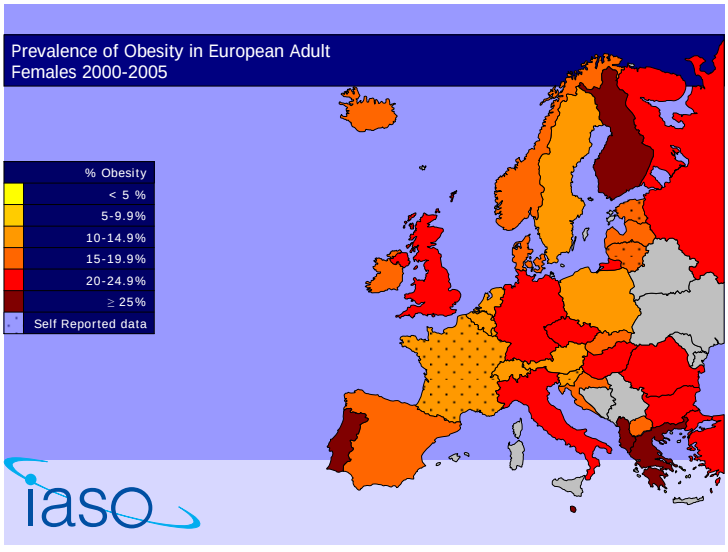
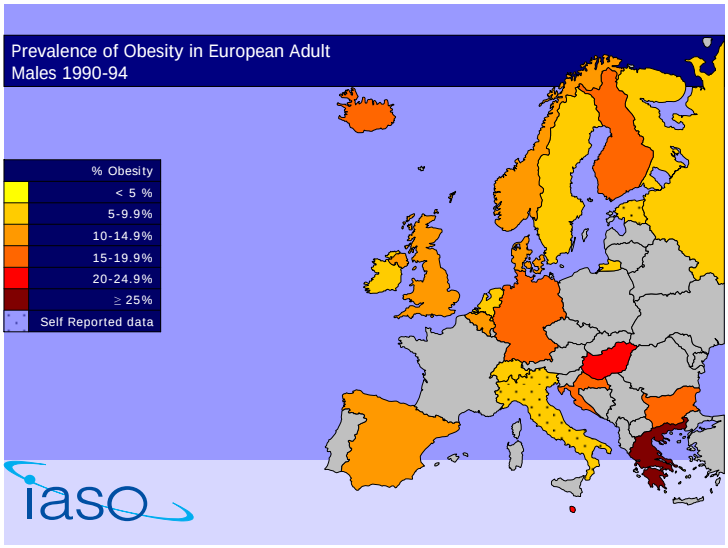
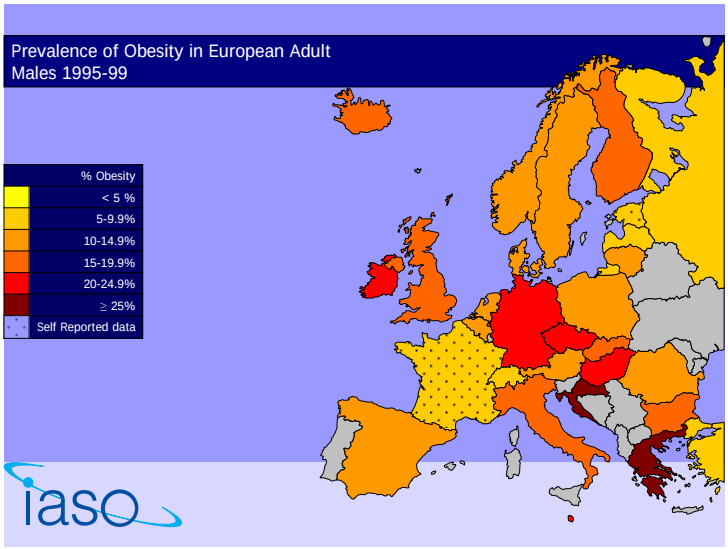


Figure 25: Adult male prevalence of obesity in Europe, 1990-2005





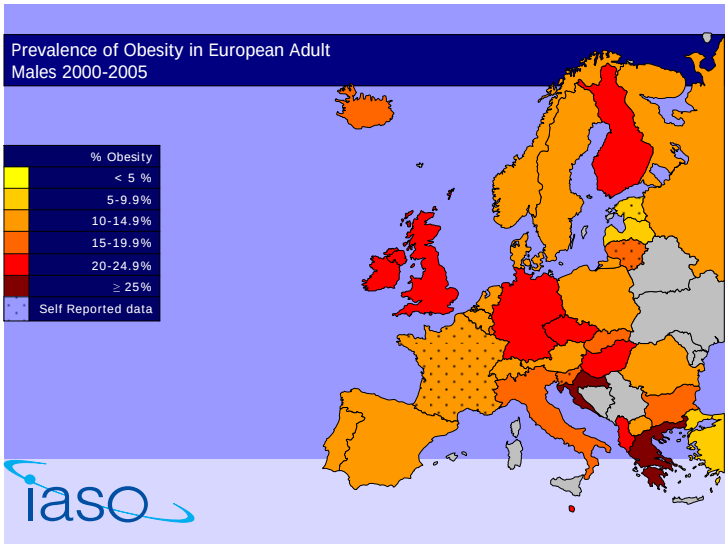
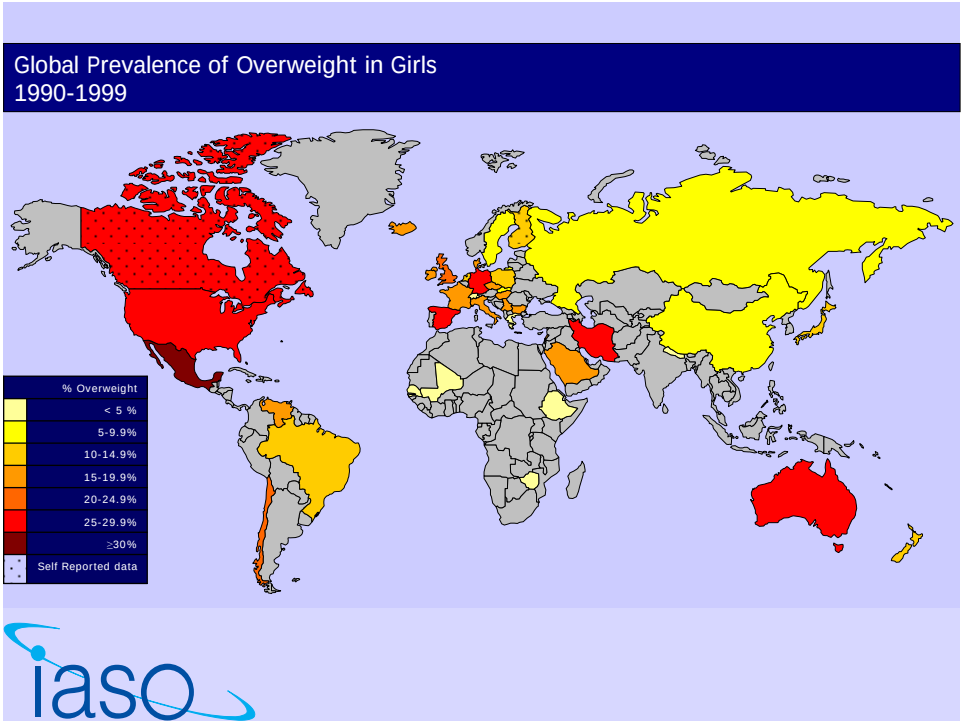


Figure 26: Children female prevalence of obesity in the world, 1990-2006



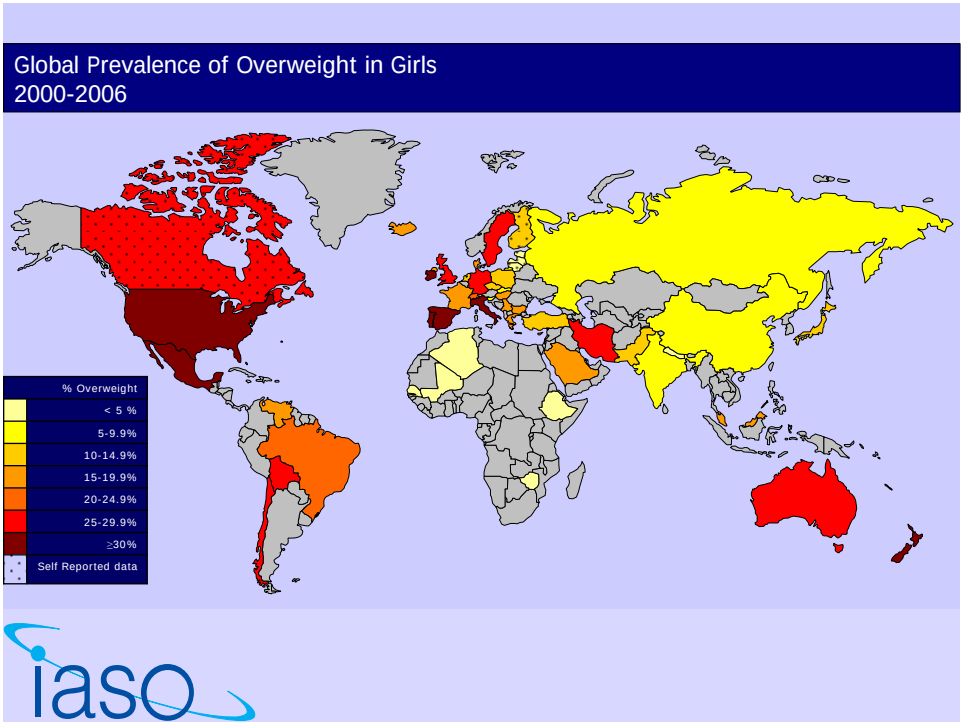


Figure 27: Children male prevalence of obesity in the world, 1990-2006