

Food and Nutrition Policy and Action Plan for Malta

2015 - 2020

**Health Promotion and Disease Prevention Directorate
Parliamentary Secretariat for Health
September 2014**

Foreward

The Maltese Government and in particular the Parliamentary Secretariat for Health, is committed to continuously improving the health and wellbeing of the Maltese population



The global burden from unhealthy diets is a major issue that is reflected in high morbidity and mortality. The effects of unhealthy diets range from chronic under nutrition to overweight and obesity. Policies to tackle this disease burden have been developed globally and at the European level, including the Vienna Declaration on Nutrition and Noncommunicable Disease in the context of Health 2020 (2013), the European Charter on Counteracting Obesity (2006), the Action Plan for the Implementation of the European Strategy for the Prevention and Control of Noncommunicable Disease 2012 - 2016, the Health 2020 framework (2012) and the EU Action Plan on Childhood Obesity 2014-2020.

The World Health Organisation has developed an updated European Food and Nutrition Action Plan 2015-2020 which proposes a number of measures developed through a consultative process within the WHO European Region.

This National Food and Nutrition Policy and Action Plan which covers the period 2015-2020 was developed by an intersectoral working group that set out to identify priority action areas in order to address the main public health challenges facing the Maltese Nation in the area of nutrition and food security. The whole-of-government and the whole of society approach has been taken in order to effectively coordinate policies and actions in other non-health sectors that could have an impact on health. This Policy and Action Plan complements the Healthy Weight for Life Strategy (2012), the National Cancer Plan (2011), and the Noncommunicable Disease Control Strategy for Malta (2011) which all focus on improving dietary habits in order to maximise health and well-being. In line with the WHO European Health Policy - Health 2020, the action plan adopts a life course approach since the impact of nutrition on health accumulates from prenatal, foetal life continuing through early childhood, adolescence, adulthood and old age. Recognizing the fact that social inequities have a great impact on this public health challenge, this national policy ultimately seeks to enhance health and well-being and reduce Malta's burden of disease by achieving change in an equitable manner.

I would like to thank the working group and all of those who provided feedback to the consultation document launched in February this year. I now invite and urge all institutions, governmental and nongovernmental organisations, all stakeholders and individuals to pledge their commitment to the implementation of this Policy and Action Plan.

Better health and well being can only be achieved through the concerted efforts of all concerned.

A handwritten signature in black ink, appearing to read 'Chris Fearn'.

Hon Mr Christopher Fearn
Parliamentary Secretary for Health

Preface

The burden of noncommunicable diseases is rapidly increasing worldwide. Out of a total of 57 million deaths which occurred in the world during 2008, 36 million (63%) were due to noncommunicable diseases, principally cardiovascular diseases, diabetes, cancer and chronic respiratory diseases. These deaths are projected to increase by 15% globally between 2010 and 2020 (to 44 million deaths).



Diet is one of the major modifiable risk factors for chronic diseases.

In the WHO European Region it is estimated that seven risk factors; tobacco, alcohol, low fruit and vegetable intake, physical inactivity, high blood pressure, high cholesterol, overweight and obesity account for 60 % of the disease burden in Europe. Five of these are directly related to diet. Hence, as expected, food and nutrition are considered to be one of the priority areas in the definition of objectives, strategies and recommendations of several programmes and policies of the World Health Organisation and the European Commission. Indeed many countries have put food and nutrition as one of the priorities in their prevention strategies.

Factors influencing food choice are not only based upon individual preferences, but are constrained by circumstances that are social, cultural and economical and are dependent on the environment. These factors include biological determinants such as hunger, appetite, and taste; economic determinants such as cost of food and individual/family income; physical determinants such as access to food, education of the person, skills and time; social determinants which include a complex mix of class, culture, and social context; psychological determinants such as mood, stress and guilt and attitudes, beliefs; and knowledge about food.

Nutrition is increasingly being identified as a major modifiable determinant of chronic disease, with scientific evidence supporting the fact that alterations in diet have strong effects, both positive and negative, on health throughout life. It is evident that the burden being posed by inadequate diets needs further action. Both population based approaches and individual targeted interventions are needed, using a collaborative health-in-all polices and whole-of-government approach involving all levels of government and relevant stakeholders. Improving diets will require a change in the environments we live in and a policy that supports making the healthy choice the easy choice. This is the basis for the development of the Food and Nutrition Policy and Action Plan. For this intersectoral plan to achieve its aim and objectives, we need coordinated action to bring about the desired changes in order to reduce the burden from diet related conditions and improve health and well being.

I would like to thank the team who developed this policy and all the stakeholders from various sectors who gave their input during the consultation phase and look forward to the implementation of the actions outlined.

A handwritten signature in black ink, appearing to read 'Gauci'.

Dr Charmaine Gauci
Director, Health Promotion and Disease Prevention Directorate

List of Abbreviations

MSDEC-AFRD	Agriculture and Fisheries Regulation Department
BMI	Body Mass Index
COSI	Childhood Obesity Surveillance Initiative
DAFNE	Data Food Networking
DHIR	Directorate for Health Information and Research
EHD	Environmental Health Directorate
ESPAD	European School Survey Project on Alcohol and Other Drugs
EU	European Union
FAO	Food and Agriculture Organisation
GDP	Gross Domestic Product
HBSC	Health Behaviour School-aged Children Survey
HELP	Healthy Eating Lifestyle Plan
HESC	Home Economics Seminar Centre
HFSS	High Fat, Sugar and Salt
HIS	Health Interview Survey
HLG	High Level Group (Nutrition and Physical Activity)
HPDPD	Health Promotion and Disease Prevention Directorate
HPCDU	Health Promotion and Chronic Disease Unit
ICCO	Intersectoral Committee to Counteract Obesity
IDF	International Diabetes Federation
KPH	Kooperattiva tal-Produtturi tal-Halib (Ltd.)
KIM	Kooperattiva ta' min Irabbi l-Majjal (Ltd.)
KMS	Kunsill Malti Għall-iSports (Malta Sports Council)
NEHAP	National Environment and Health Action Plan
MCCAA	Malta Competition and Consumer Affairs Authority
MEDE	Ministry of Education and Employment
MEPA	Malta Environment and Planning Authority
MEH	Ministry for Energy and Health
MFH	Ministry for Health
MHEC	Ministry for Health, The Elderly and Community Care
MRA	Malta Resources Authority
MRRA	Ministry for Resources and Rural Affairs
MSDEC-RDAD	Rural Development and Aquaculture Department
NOIS	National Obstetric Information System
NSO	National Statistics Office
WASH	World Action on Salt and Health
WCMP	Water Catchment Management Plan
WHA	World Health Assembly
WHO	World Health Organisation
WSC	Water Services Corporation

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CHAPTER I

BACKGROUND

The joint Food Agriculture Organisation and World Health Organisation (FAO/WHO) World Declaration on Nutrition (FAO/WHO, 1992) states that ‘... access to nutritionally adequate and safe food is a basic individual right’. It also emphasises that healthy nutrition and food safety are vital in the prevention of a wide-range of diseases and disorders and are prerequisites for improving health. The right to food is safeguarded in several treaties relating to human rights. The notion of the right to food as a human right brought with it legal responsibilities on the state and community of states to guarantee the right to food for all. Nutritional status was defined as a ‘corner stone’ to the development of civilisation in the United Nations Millennium Development Goals (United Nations, 2013).

Over many years, the World Health Assembly (WHA) by its adoption of a large number of resolutions and policy documents supported national and international efforts in satisfying the fundamental right of access to sufficient quantities of safe and healthy food. These include:

1. *The WHO Global Strategy on Diet, Physical Activity and Health (2004)*. This strategy describes the responsibilities of various stakeholders (WHO, international partners, private sector, civil society and nongovernmental organizations) to take action to improve diet and promote physical activity for the prevention of noncommunicable diseases. It called for a ‘balanced’ approach between individual responsibility for lifestyle choices and societal responsibility to make the ‘healthy choice’ the easier choice.
2. *The European Charter on Counteracting Obesity (WHO, European Ministerial Conference on Counteracting Obesity, 2006)*. Countries within the European Region committed themselves to demonstrate a slow down and bring to an end the obesity epidemic within the next 4–5 years, especially among children, and that the obesity prevalence trends should be reversed before 2015. The Charter calls for action beyond health education and therefore calls for changes in the physical, political, informational and social environments to facilitate a healthy energy balanced lifestyle. The multidisciplinary and ecological approach was a step forward for public health policy and practice in Europe at that time.
3. *The WHO European Action Plan for Food and Nutrition Policy 2007-2012 (WHO, 2007)*. This Action Plan focuses on addressing public health challenges in the area of diet-related noncommunicable diseases; obesity trends in children and adolescents; micronutrient deficiencies and foodborne diseases. It outlines six action areas. These are: (i) supporting a healthy start; (ii) ensuring a safe, healthy and sustainable food supply; (iii) providing comprehensive information and education to consumers; (iv) carrying out integrated actions to address related determinants; (v) strengthening nutrition and food safety in the health sector and, (vi) monitoring and evaluation.
4. *The 2008 Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases (WHO, 2008)*. This strategy gives clear action points for countries to work towards reducing the risk factors for noncommunicable diseases. It further underlines the need for the identification and dissemination of information on evidence-based interventions and structures as previously

mentioned in the 2004 WHO Global Strategy on Diet, Physical Activity and Health.

5. *The United Nations (UN) Political Declaration of the High-Level Meeting of the General Assembly on the Prevention and Control of Noncommunicable Diseases (UN General Assembly, 2011)*. This declaration expresses concern over food security due to the various variables affecting adequate food supply and their effect on the control and prevention of noncommunicable diseases. It also calls for the need for immediate, coordinated and multi-sectoral efforts to address those impacts by all relevant stakeholders.
6. The most recently adopted *WHO European Health Policy Framework and Strategy, 'Health 2020' (WHO, 2012)*. One of the main objectives of Health 2020 is to '*improve health for all and reduce health inequalities*'. Mindful of the various factors that determine exposure and vulnerability, Health 2020 focuses on addressing the major health challenges across the Region through tackling the social and lifestyle determinants of health through a whole of government and whole of society approach across the life course.
7. *The Global Nutrition Policy Review (2013)* provided information on whether the countries have nutrition policies and programmes, how they are being implemented, what the implementation coverage is, who the stakeholders are, what the coordination mechanism is, and how the monitoring and evaluation are being implemented. Most countries that responded to the survey had policies and programmes that are addressing key nutrition issues, such as under nutrition, obesity and diet-related NCDs, infant and young child feeding, and vitamin and mineral malnutrition.
8. In July 2013 Ministers of Health of the European Region signed *the Vienna Declaration on Nutrition and Noncommunicable Diseases in the Context of Health 2020* which commits member states in the European Region to address the root causes of obesity and diet-related noncommunicable diseases and to empower citizens to make healthy choices.
9. The vision of the updated *European Food and Nutrition Action Plan 2015-2020* which will be presented for endorsement at the Regional Committee in September 2014 is to aim for a health promoting Europe free of the preventable burden and impact of diet-related non communicable diseases, under nutrition and micronutrient deficiencies, premature death and avoidable disability.

In view of the dramatic rise in the levels of overweight and obesity and the worsening trend of poor diets and low physical activity levels across large parts of Europe, the EU began to significantly ramp up its action in this area approximately ten years ago.

1. Recognising the human suffering and the economic consequences caused by the increasing incidence of obesity, in 2004 The Council of Ministers of the EU invited the Commission to contribute to promoting healthy lifestyles, and to study ways of promoting better nutrition within the European Union. In 2005 the European Commission published the Green Paper *Promoting healthy diets and*

physical activity: a European dimension for the prevention of overweight, obesity and chronic diseases.

2. In the same year the EU published the Blueprint for Action - *Protection, promotion and support of breastfeeding in Europe: a blueprint for action 2004*. The Blueprint for Action provides a framework for the development of such plans. The Blueprint has been available to all those Governments, institutions and organizations who are willing to work together for the protection, promotion and support of breastfeeding.
3. In order to establish a common forum for action the *European Platform for Action on Diet, Physical Activity and Health* was launched in March 2005. The Platform brings together all relevant players active at European level that are willing to enter into binding and verifiable commitments aimed at halting and reversing current overweight and obesity trends. The objective of the Platform is to catalyse voluntary action across the EU by business, civil society and the public sector working together.
4. In May 2007, the European Commission established a coherent and comprehensive Community Strategy to address the issues of overweight and obesity, by adopting the *Strategy on Nutrition, Overweight and Obesity-related Health Issues* which focuses on action that can be taken at local, regional, national and European levels to reduce the risks associated with poor nutrition and limited physical exercise, while addressing the issue of inequalities across member states. It advocates a partnership approach, and encourages action by four main groups of actors: the EU itself, Member States, private actors, and international cooperation with the WHO. It provides an integrated framework for action intended to contribute to reducing ill health due to poor nutrition, overweight and obesity in the EU.
5. The Strategy launched in 2007 was evaluated in 2012 in order to assess both the implementation process as well as its impact. The outcome of the evaluation was that progress has been made (albeit to a varying extent) towards all of the objectives defined in the Strategy. The measures taken were clearly steps in the right direction, although their contribution has in most cases not led to major changes as the levels of overweight and obesity continue to be high across the EU. The evaluation highlighted that most of the action taken in Europe to date (both at the EU and at the national levels) has been of a relatively soft nature, and has relied primarily (although the extent varies by country) on information provision and education, limited interventions in specific environments (such as schools), and voluntary actions by the food industry and other private actors, so as to generate an impact via a series of relatively subtle changes. The argument for the introduction of more intrusive measures was put forward. The report also highlighted that a greater focus on the promotion of physical activity and a greater consideration of the impact of any measures introduced on the lower socio-economic groups not to increase social inequalities was needed.
6. The *EU Action Plan on Childhood Obesity 2014-2020* was published in February 2014. Despite action at the European level to reverse the rising trend in overweight and obesity, the proportion of the population who are overweight or obese remains worryingly high for adults and for children and young people. The

implications of overweight and obesity in Europe are stark: the prevalence of obesity has more than tripled in many European countries since the 1980s and with this rise comes a concomitant increase in rates of associated non-communicable diseases.

In the 1980s, Malta was the first country to have a National Food and Nutrition Policy. Although developed much before the action plan, Malta's policy set a visionary direction and aligned well with the First Action Plan for Food and Nutrition Policy adopted by the World Health Organisation (EURO Region) for the period 2000-2005. The latter emphasised the need for food and nutrition policy development to protect and promote health and reduce the burden of food-related diseases, while contributing to socio-economic development.

Malta highlighted the importance of preventing such diseases in the *Health Vision 2000 (Malta) National Health Policy*:

“Prevention of many of the major diseases, or their complications, such as coronary heart disease, certain cancers, and non-insulin dependent diabetes is possible and this calls for a shift in emphasis towards prevention and health promotion. The lifestyle risk factors of smoking, unhealthy diets, obesity and lack of physical activity must be tackled seriously. We must provide the environment and facilities for people to be able to make the right choices. This requires a long-term commitment and a standardised approach to the evaluation of health promotion initiatives.”

Major noncommunicable diseases (NCDs) are responsible for about 82% of deaths in Malta. In 2012, cardiovascular disease was the top cause of mortality in Malta accounting for 46.7% of all deaths (National Mortality Register, 2012). Neoplasia was the second commonest cause of mortality in Malta accounting for 27.1% of all deaths. The published data for Malta, through the IDF Diabetes Atlas estimate that the diabetes prevalence in Malta is 10.14% of the adult population, representing 33,260 people in 2013 (IDF Diabetes Atlas 2013) and the atlas forecasts a rise in prevalence to 11.6% of the Adult population, representing 36,600 people by 2025 (IDF Diabetes Atlas, 2006).

Currently, the majority of NCD deaths, disability and morbidity occur disproportionately in poorer communities and are contributing to widening health gaps between and within countries. This results in enormous human suffering and produces an increased threat to the socio-economic development of many countries. Poor nutrition still accounts for an important percentage of the total disease burden.

Poor diets and sedentary lifestyles are contributing to an increase of obesity in most countries of the WHO European region, with lower socio-economic groups bearing the biggest burden. Following the documentation of local data on obesity among the Maltese population, international scientific and health agencies such as the World Health Organisation and the International Obesity Task Force have reiterated that Maltese children and adults are amongst the heaviest both within Europe as well as globally (WHO, 2010).

This Food and Nutrition Policy and Action Plan 2015-2020, addresses these health challenges in order to seek to reduce mortality and morbidity and address the economic implications of poor nutrition. The projected national health care cost attributed to obesity

is expected to increase from €25,390,000 to €34,980,000 by 2020, if no change in the proportion of overweight and obese individuals in the population and no changes in the average health care usage takes place. However, in the scenario, where a 4.3 % reduction in obesity to normal weight category by 2020, around €3,000,000 per year could be saved as part of the health care cost being borne by the state and which is attributed to overweight and obesity (A Healthy Weight for Life: A National Strategy for Malta 2012-2020, MHEC, 2012).

Globally, acute undernutrition is still documented in areas facing food insecurity and chronic undernutrition due to micronutrient deficiencies. In Malta the latter have not been considered as a major public health challenge. However, at national level, no studies have been carried out to determine the extent of micronutrient deficiencies amongst the Maltese population. Several EU countries are now paying serious attention to iodine, iron, folic acid, vitamin D and calcium since they may significantly contribute to chronic diseases in industrialised societies with impacts among vulnerable groups including women, children, and the middle-aged and older people. An important challenge for public health is to understand the epidemiology of micronutrient deficiencies and then implement successful methods of prevention.

Food insecurity is also a problem facing vulnerable groups. Indicators show that Malta's position with regards to food security is a stable one. In response to the Rome Declaration on World Food Security and the World Food Summit Plan of Action held in 1996, Malta reported that it is not facing any problems of food security, whether in availability, stability or access to food supplies. Moreover, according to the Food and Agricultural Organization (FAO, 2010), the food deficit of undernourished people in Malta in 2006-2008 was that of 100kcal/person/day.

A review of progress since the First International Conference on Nutrition (ICN) in 1992 including the identification of the major constraints encountered in the implementation of National Plans of Action for Nutrition will take place at the Second International Conference on Nutrition which will take place in Rome in November 2014. This high-level political event will bring together all the relevant sectors (food, agriculture, health, education and social protection) to mobilise the political will and resources to improve nutrition and reach consensus around a global multi-sector nutrition framework with concrete steps to improve nutrition.

The Food and Nutrition Action Plan for Malta will not address the issues of food safety, the harmful use of alcohol and physical inactivity as these issues are being dealt with in other documents. Malta has already an established comprehensive system for food safety as regulated by the Food Safety Act (2004). The National Alcohol Policy which aims to regulate alcohol consumption and minimise risk, has been formulated and is currently undergoing consultation. Through the Sports Act (2003), the Malta Sports Council was set up to promote, develop and implement programmes that promote participation in physical activity in the Maltese Islands which are available to all ages, abilities and needs. A National Sports Policy is being developed by the a Working Group appointed by the Parliamentary Secretary responsible for Sports and a Strategy for Health-Enhancing Physical Activity will be developed by the Health Promotion and Disease Prevention Directorate in 2015.

CHAPTER 2

SITUATION ANALYSIS

2.1. Epidemiological Situation

2.1.1. Overweight and Obesity

Worldwide, at least 3.4 million people die each year as a result of being overweight or obese, and an estimated 35.8 million (2.3%) of global DALYs are caused by overweight or obesity. The worldwide prevalence of obesity has nearly doubled between 1980 and 2008. Overweight and obesity is on the increase in the Maltese islands as well at all ages.

2.1.1.1. Children and adolescents

A cohort of children who were measured at age 7 and then at age 9 showed on average a 13% increase in the proportion of overweight and obese children along the years (Table 1). The proportion of obese 9 year olds had increased by 9.1% while the proportion of overweight 9 year olds had increased by 11.6% (WHO, 2012).

Children born in 2001						
	Age 7 Years (2008)		Age 9 years (2010)		Age 11 years (2012)	
	Boys	Girls	Boys	Girls	Boys	Girls
% overweight	8.8	16.1	17.6	16.6	22.4	23.7
% obese	17.3	13.5	26.4	23	27.8	20
% o/w + obese	26.1	29.6	44.4	39.6	50.2	43.7

Table 1: Measured BMI trends in cohort as measured in 2008, 2010 and 2012

In the Health Behaviour in School Children (HBSC) Study, the body mass index (BMI) is based on self-reported weight and height. Figure 1 shows the percentage overweight and obesity rates by gender. This study showed that BMI amongst Maltese school children in Malta is one of the highest in the world, with Malta ranking second to the USA for overweight and obese children aged 11 and 13, while ranking first for children aged 15. In comparison with current anthropometric data, these self-reported results are probably an underestimate (HBSC, 2010).

Comparing this data to that from previous studies, one can identify increasing rates in 11 year old boys and girls and in 13 year old boys, and decreasing rates for 13 year old girls and 15 year old boys and girls.

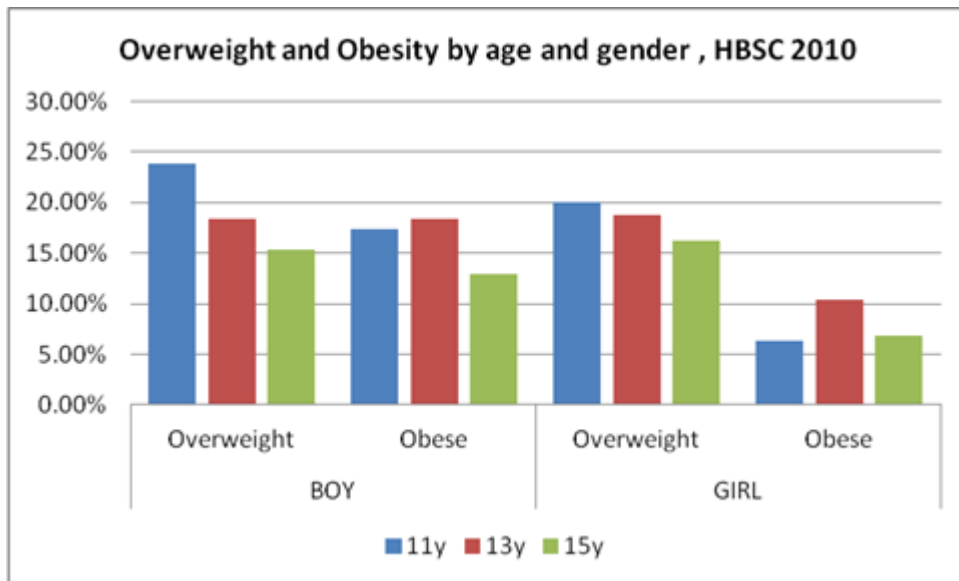


Figure 1. Overweight and Obesity in 11,13 and 15 year olds (HBSC 2010)

2.1.1.2. Adults

According to the European Health Interview Survey (DHIR, 2008) that covered the population aged over 15 years, approximately 22% of the Maltese population is obese (BMI >30 kg/m²) and a further 36% are overweight (BMI > 25 kg/m²).

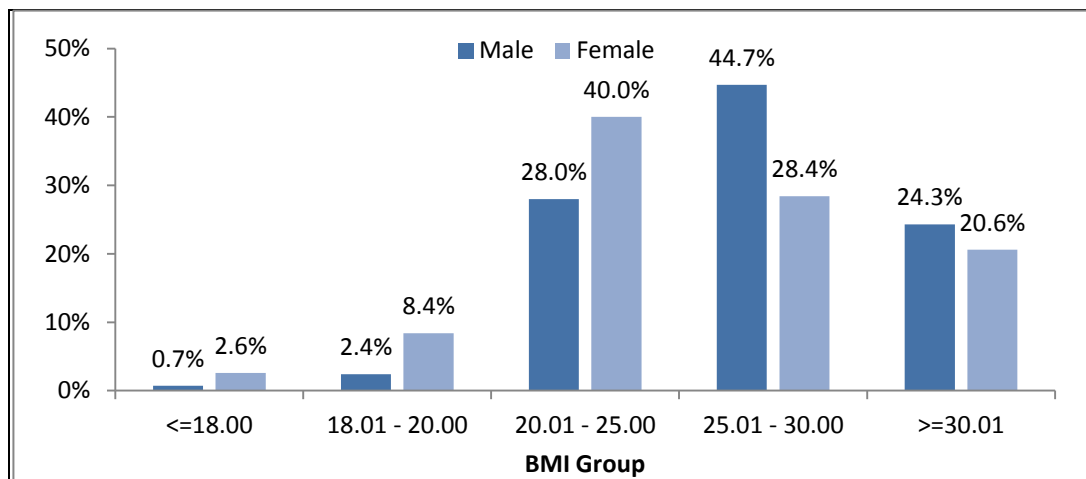


Figure 2: Self-reported BMI in population aged 15+, 2008

The European Health Examination Survey 2010 (pilot study) (DHIR, 2012) showed that the percentage of the population aged 19 years and over that is obese is 29.8 % and a further 47.2 % are overweight (Figure 2). When compared to EU member states, Malta has the highest rate of obesity amongst adult males and the third highest rate amongst females.

The effect of obesity reduction on the prevalence and incidence rates of a number of diseases including cancers, cardiovascular disease, osteoarthritis, diabetes and hypertension for Malta were studied by WHO (Webber L, Divajeva D, Marsh T, et al

2014). These projections indicate that more males tend to be overweight over the age of 25 years. Obesity is predicted to increase in the younger age groups by 2030, but to fall in other age groups. When the proportion of obese persons in the population loose weight, it is expected that the overweight category will increase. According to this modelling study, there would be a substantial increase in number of cases of noncommunicable diseases which could be avoided between 2010 and 2030 per 100 000 of the Maltese population in the case of a 1% (scenario 1) or a 5% (scenario 2) decrease in obesity (Figures 3,4). The incidence /prevalence reduction was highest for hypertension.

Cumulative incidence cases avoided between 2010 and 2030 per 100 000 of the population by scenario 1 and 2 Malta

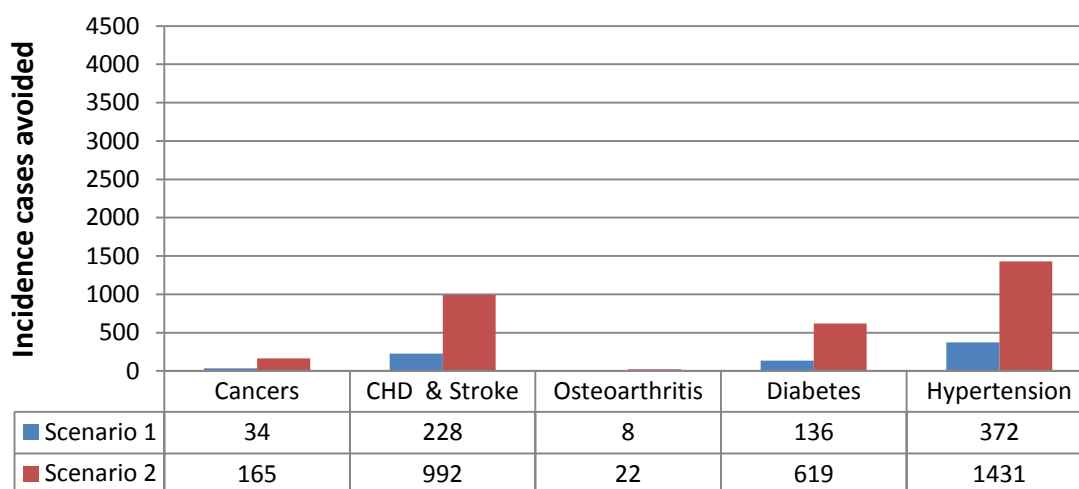


Figure 3 Effect of obesity reduction by 1% (scenario 1) and by 5% (scenario 2) on cumulative incidence cases avoided (supplementary analysis)

Prevalence cases avoided in 2030 per 100 000 of the population by scenario 1 and 2 Malta

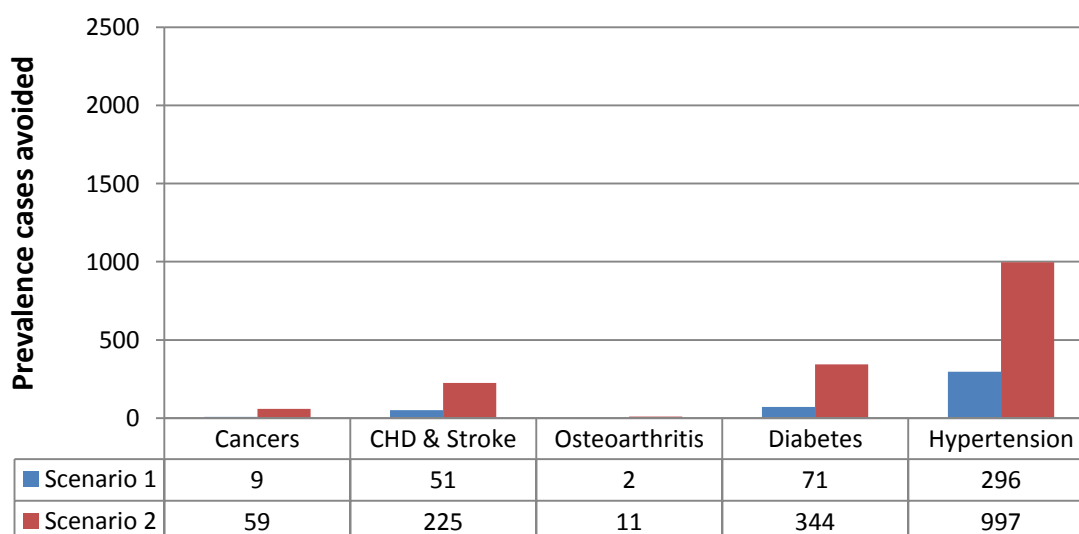


Figure 4 Effect of obesity reduction by 1% (scenario 1) and by 5% (scenario 2) on prevalence cases avoided (supplementary analysis)

2.1.2. Dietary habits of the Maltese Population

The traditional Maltese cuisine has been primarily Mediterranean, based on seasonal agricultural products and seafood and with strong Sicilian influence. Over time and with advancing development, there has been a rapid shift from a state of food shortage to one of affluence, based in a cultural context where the identity is no longer Mediterranean but has a strong Anglo-Saxon influence. (Tessier and Gerber 2005).

The eating patterns of the Maltese population were reported by Dr Mary Bellizzi in 1993. The data was derived from the 1989 -1990 Household Budgetary Survey and can be seen in Table 2.

1. The staple cereal available in Malta was wheat, predominantly processed as bread (78 %); followed by pasta (11 %).
2. Beef and pork were the most popular types of meat followed by poultry and rabbit; however processed meats (ham, luncheon meat and bacon) contributed up to 60 % of all pork purchased.
3. Fish consumption was low compared to meat with the average consumption per capita of 52 grams.
4. Maltese consumed an average of five to six eggs (per person) in a week.
5. Nearly two-fifths of the cheese consumed was the high fat Cheddar cheese as it was inexpensive compared with the other cheeses. Low-fat milk was not available in the market in the 1980's.
6. The proportion of energy taken from fruit and vegetables in 1986-1988 was 6 %.
7. Sugar supply in Malta was one of the highest in Europe and is the highest in the European Mediterranean region. It was estimated that Malta was the second highest per capita consumer of soft drinks.
8. Fats provided 16.2 % of total energy intake (excluding alcohol) in 1986-88; of which 13.3 % came from vegetable oils and margarine and 3 % from animal fats.

Table 2: Eating Patterns in the 1980's as reported by Dr. Mary Bellizzi (1993)

2.1.2.1. Adolescents (11-15 years) (HBSC, 2010)

Breakfast

Average daily breakfast consumption reduces with age from an average of 55% in those aged 11 to an average of 45% in those aged 15. This is similar to the trends observed in the HBSC average. In 2010 consumption was greater in boys when compared to girls in the older age groups of 13 and 15 while consumption was greater in girls in the younger age group. For all three age categories, the proportion of Maltese children consuming breakfast daily is lower than the HBSC average for 2010.

Fruit and Vegetables

Amongst girls, daily fruit consumption remains relatively constant throughout the three age groups at approximately 42%. Amongst boys there is a sharp decline in the 15 year old age group with only 25% consuming fruit daily when compared to 40% in the younger

categories. There was an increase in consumption of fruits in girls aged 15 and an increase in 13 year olds boys since 2006.

When compared to the HBSC average for 2010, Maltese girls aged 13 and 15 consume fruit more often while boys aged 11 and 13 are also above the average. The trends observed for the data from Malta is similar to the trend in the HBSC average where we see a decline with age and a difference between genders with girls consuming fruit more than boys.

	Food Consumption			
	11yrs (%)	13yrs (%)	15yrs (%)	adults (%)
Breakfast	55	43	45	
daily fruit	42	41	34	74
daily vegetables	16	15	15	51
daily soft drinks	44	44	49	21
never soft drinks				57
cereals >3x/wk				28
rice/pasta				30
fried potatoes				32
slices bread/day				2
fish 1-2x/wk				52
chicken/rabbit 1-2x/wk				72
meat 1-2x/wk				62
no cheese				35
no low fat cheese				40
cheese 1-2x/wk				65
veg. oil in food prep				53
olive oil on bread				39
sweets 1-2x/wk				26
never sweets				38
sweet pastries 1-2x/wk				33
never sweet pastries				31
add salt with cooking				47
never add salt				35
add salt at table				58
always add salt at table				24

Girls report that they consume vegetables on a daily basis more often than boys across all ages. On average 21 % of the girls and 16 % of the boys consume vegetables on a daily basis. This difference seems to increase as age increases. As age increases, more girls tend to consume vegetables on a daily basis. However, there is a slight decrease as age increases in boys. Across all ages, Malta is below the HBSC 2010 average. This difference increases as the age increases.

Soft Drinks

Amongst boys; daily soft drink consumption increases with age from 44% in 11 year olds to 49% in 15 year olds. On the other hand, amongst girls consumption decreases with age from 44% in 11 year olds to 34% in 15 year olds. In 2010 the daily consumption of soft drinks did not vary amongst genders in 11 year olds but by the age of 13 and more it does vary such that by the age of 15, boys consume more soft drinks when

compared to girls.

The proportion consuming soft drinks daily is well above the HBSC average for all three age groups. As age increases the HBSC average for soft drink consumption increases and the percentage consumption is greater amongst boys when compared to girls in all age groups. This is the same pattern observed in the data for Malta. The trend since 2002

shows an increased softy drinks consumption in 11 year olds, 13 year old girls and 15 year old boys.

2.1.2.2. Adults

Data on dietary habits of the Maltese population aged 16 and over is available from two surveys: the 2002 National Health Interview Survey and the 2008 European Health Interview Survey. The former contained questions on dietary intake of starchy food, fish, saturated fat, sugar and sugary drinks, and salt, while the latter provided data on fruit and vegetable consumption.

Starchy Food (2002)

The consumption of starchy foods on three or more days a week was generally low. Approximately 28% consumed cereals three or more days a week, 30% consumed rice or pasta, 10% consumed fried potatoes and 32% consumed other potato products. Maltese bread remained the most common type of bread consumed with an average of 2 slices per day while brown bread is the bread least consumed by the population.

Fish (2002)

Fish was most commonly eaten one to two days per week at 51.8% with no difference between males and females. The results showed that the consumption of fish increased with advancing age. Education did not appear to play a significant role in the consumption of fish in the population.

Protein and Fat Intake (2002)

Chicken and rabbit consumption was similar in both genders with 71.8% of the population reporting eating these products on one to two days a week. There were no differences in consumption by age and educational level. Meat was consumed on one to two days a week by 62% of the population. There is an inverse association between the frequency in the consumption of meat and meat products and educational level.

Thirty five per cent of the population reported never eating cheese while 40% never consumed low fat cheese. Amongst those who ate cheese or low fat cheese, it was consumed on one to two days a week. Educational level did not appear to play a major role in the consumption of cheese or low fat cheese by the population.

Contrasting habits were noted in the use of oils/fats for cooking and those used on bread. Other vegetable oils were the most common oils used for food preparation at 53% and olive oil was the most commonly used oil/fat on bread at 38.7%. The use of olive oil and other vegetable oils varies by age with the use of olive oil reducing as age increases and the use of other vegetable oils increasing with older age groups.

Sugar (2002)

38% of respondents reported never consuming sweets while 26% said they consumed sweets on one to two days a week. 33.4% of the population said they consumed sweet pastries on one to two days a week while another 31% said they never consumed sweet

pastries. The highest daily consumption was for the younger age groups. Daily consumption rose again in those aged 75 years and over.

57% reported never consuming sugared soft drinks while 21% consumed such drinks daily. The highest daily consumption was for the younger population aged 15-24 years where 50% of males and 22% of females in this age group consumed sugared soft drinks daily. Similar to the pattern observed with sweets and sweet pastries, while consumption of sugared soft drinks decreased with age, it was noted to increase again in those aged 75 years and over. Educational level seems to play a significant role in the consumption of sugared drinks; in fact those who consumed sugared soft drinks daily had a significantly lower number of years of completed education.

Salt (2002)

47 % of the population ‘almost always add salt’ while cooking and 35% reported never adding salt or ‘use low salt alternatives’. 58% never add salt at the table or ‘use a salt alternative’ while 24% always add salt at the table. Education was not significantly associated with habits related to salt usage.

Fruit and Vegetables (2008)

74% of adults reported consuming fruits at least once a day while 51% reported consuming vegetables at least once a day. Daily fruit and vegetable consumption was highest amongst females and increased with age. Amongst those aged 45 years and over, approximately 80% reported consuming fruit daily while approximately 56% report consuming vegetables daily.

2.1.2.3. Food Consumption Surveys

The first Food Consumption Survey which attempted to look at foods consumed by the adult population was carried out by the Malta Standards Authority (2010). This showed that the Maltese still have poor eating habits that can be further enhanced for better health attainment. It determined that Maltese people still consume high amounts of sweets and sugary foods and that consumption of vegetables was low.

A common limitation to all of the above-mentioned food consumption survey reports is the lack of adequate information on the quantity of food (grams) and drink (litres) consumed by the targeted population. Hence, the dire need for Malta to set up a methodologically sound scientific food consumption survey to be carried out periodically across all age groups so as to monitor nutrition trends and evaluate interventions in the area of nutrition.

A National Food Consumption Survey aimed at determining the food consumption patterns of the Maltese population aged 7 years and over is being carried out by the Health Promotion and Disease Prevention Directorate. The preparatory work and piloting of the study will be carried out in 2014 while the actual fieldwork will be carried out during 2015/2016. In addition to food consumption, the study will also look into food consumption frequency, engagement in physical activity, salt intake and urinary sodium excretion will be estimated in a sub-sample of the study population.

2.1.3. Diet-related Noncommunicable Diseases

Noncommunicable diseases account for nearly 86% of deaths and 77% of the disease burden in the WHO European Region, putting increasing strain on health systems, economic development and the wellbeing of a large part of the population (Action Plan for Implementation of the European Strategy for the Prevention and Control of Noncommunicable Diseases 2012 – 2016, WHO, 2012).

This section provides an outline of the epidemiological data for hypertension, diabetes, hypercholesterolaemia, cardiovascular disease and some specific cancers for the Maltese population.

2.1.3.1. Hypertension

The self-reported life time prevalence of hypertension in the adult population is 22% (EHIS 2008). Prevalence increases with age in both genders, with half the population reporting hypertension at age 75 years and over. Females have a slightly higher prevalence than males, though the difference is not significant.

The pilot European Health Examination Survey (2010), reported normal blood pressure in 67.9 % participants. There were 23.5% with stage 1 hypertension (Systolic \geq 140-159 mmHg or Diastolic \geq 90-99 mmHg) and a further 8.5% with stage 2 hypertension (Systolic \leq 160 mmHg or Diastolic \leq 100mmHg) (MHEC, 2012).

2.1.3.2. Diabetes

The self-reported life time prevalence of diabetes among the Maltese population as reported in the European Health Interview Survey (EHIS, 2008) was 8.3%. Estimates by the International Diabetes Federation in 2006 put the prevalence rate at 9.8% of the adult population (IDF Diabetes Atlas, 2006) Prevalence increases with age in both genders. The prevalence rate doubles in the age group 55 to 64 years when compared to the age group 45 to 54 years.

The European Health Examination Survey (2010) estimated the prevalence rate amongst the population aged 20-79 years to be 10.1% with a higher rate in women (10.7%) than men (9%) (EHES, 2010). Estimates by the International Diabetes Federation in 2013 put the prevalence rate at 10.14% of the adult population (IDF Diabetes Atlas, 2013).

2.1.3.3. Hypercholesterolaemia

According to self-reported data on hypercholesterolemia from the National Health Interview Survey 2002, the self-reported life time prevalence of hypercholesterolemia in the population is 8.9%. According to the EHES (2010), 37.5 % had low risk total serum cholesterol level (\leq 5.00mmol/l); 40 % higher risk total serum cholesterol level ($>$ 5.00 – 6.18 mmol/l) and 22 % a high risk total serum cholesterol level ($>$ 6.18 mmol/l)(MHEC, 2012).

2.1.3.4. Colorectal Cancer

In 2012 the European age standardised incidence rate for colorectal cancer amongst Maltese males was approximately 60 cases per 100,000 population while for Maltese females it was 38 cases per 100,000 population (EUCAN,2012). These rates show that the incidence of colorectal cancer in Malta was very close to that of the EU-27 average.

2.1.3.5. Stomach Cancer

In Malta the European age standardised incidence rate for stomach cancer amongst males was approximately 14 cases per 100,000 population while for females it was approximately 5 cases per 100,000 population (DHIR, 2012).

2.1.3.6. Liver Cancer

In Malta the age standardised incidence rate for liver cancer amongst males is approximately 9 cases per 100,000 population while for females it is approximately 3 cases per 100,000 population (DHIR, 2012).

2.1.4. Mortality data for Noncommunicable Diseases

Diseases of the circulatory system, namely ischaemic heart disease, stroke and heart failure are the leading causes of death accounting for 46.7% of all deaths. Despite a downward trend in mortality rates from diseases of the circulatory system, rates are higher than the average for the EU-15.

2.1.4.1. Ischaemic Heart Disease

In 2012 ischaemic heart disease was the leading cause of death with a European age standardised mortality rate of 143 deaths per 100,000 population with a male to female ratio of 1.7. The age standardised mortality rate for Malta is well above the EU-15 average. This is considerably higher than the Standardised Death Rate for the EU 15 and has approached the rate of the EU 13.

2.1.4.2. Cerebrovascular Disease

The age standardised death rate for cerebrovascular disease in Malta is above the EU-15 average, though the difference is not as wide as for ischaemic heart disease. In 2012 there were 41 deaths due to cerebrovascular disease per 100,000 in accounting for 8.1% of all deaths.

2.1.4.3. Colorectal Cancer

Colorectal cancer mortality rates for Malta do not follow a similar pattern as those of incidence rates. While in males the mortality rate is similar to the EU-27 average, in females the mortality rate is slightly higher than the EU average. Amongst males in 2012 there were approximately 23 deaths per 100,000 population due to colorectal cancer compared to 24 deaths per 100,000 in Europe. On the other hand in females in 2012, there were approximately 16 deaths due to colorectal cancer per 100,000 population in Malta compared to 14 deaths per 100,000 in Europe.

2.1.4.4. Stomach Cancer

In 2012 the European age standardised death rate for cancer of the stomach in males was approximately 10 deaths per 100,000 population while in females it was approximately 5 deaths per 100,000 population. Both figures are lower than the EU average.

2.1.4.5. Liver Cancer

The European age standardised death rate for diseases of the liver was 6.6 per 100,000 population. In 2012, there were 40 deaths of which 28 were males and 12 were females. Of these, 12 males and 2 female deaths were attributed to alcoholic liver disease. Mortality due to chronic liver disease is low for males and even lower for females in Malta when compared with EU-15 and EU-13 (Figure A12).

2.1.5. Micronutrient Deficiencies

As opposed to obesity, back in the late 1980's micronutrient deficiencies were not considered to be a major public health challenge in the Food and Nutrition Policy for Malta (Department of Health, 1990); and thus far, no studies at national level have been carried out to determine if and to what extent micronutrient deficiencies exist among the Maltese population. It is envisaged that any such existing deficiencies will be identified from the national food consumption survey that is currently being undertaken by the Directorate.

2.2. Current strategies and legislative measures

2.2.1. The Food and Nutrition Policy for Malta (1990)

Malta's Food and Nutrition Policy was endorsed by the Government of Malta in November 1988 following a review of available data on food and the health situation in Malta in 1986. At that time, it was observed that the prevalence of noncommunicable diseases including overweight and obesity in the Maltese Islands was high and that dietary patterns needed to be improved. The Second National Nutrition Conference in 1988 made strong recommendations to improve the nutritional status of the Maltese population and

emphasised the need for political support for policies and actions within the food and nutrition field.

2.2.2. National Nutrient Goals and Dietary Guidelines

The first Conference on Nutrition in Malta held in 1986 recommended for the Maltese population the nutrient goals outlined in Table 3 below.

NUTRIENT GOALS FOR AVERAGE MALTESE DIET	
Total Fats	30% of Total Energy Intake
Saturated Fats	10% of Total Energy Intake
PS Ratio	0.5-1.0
Cholesterol	<10mg
Total Carbohydrates	55% of Total Energy Intake
Sugars	10% of Total Energy Intake
Dietary Fibre	30gm/day
Proteins	12 - 15% of Total Energy Intake
Salt	< 5-8gm/day
Fluoride	0.7 – 1.3mg/l
Alcohol	< 2 units/day

Table 3: The National Nutrient Goals and Dietary Guidelines for the Maltese people (Malta Food and Nutrition Policy, Department of Health, 1990)

The same conference concluded that ‘to achieve the above nutrient goals the Maltese people are advised ‘to eat less meat and have fish and poultry in preference to beef; substitute high fat dairy products with low fat alternatives; and eat fewer eggs, more fresh vegetables and fruit and whole grain cereal products’.

2.2.3. Changes in the food supply over the years

Malta underwent major changes in the type and quality of food products available on the market since its 1990 national food and nutrition policy. Food supply on the local market was further influenced by ‘globalisation’ and ‘urbanisation’. These major changes included:

- a) an increase in the variation of food stuffs available e.g. the introduction of fresh skimmed milk availability in 1998; wholemeal Maltese bread and salt free bread in 2010;
- b) ‘all year round’ availability of previously seasonal food items;
- c) an increased availability of unhealthy food products high in energy (calories), fat, saturated and trans fatty acids, salt and sugar with a relative reduction in the accessibility to healthier options;
- d) an increase in the national production of most commodities

Some of the above-mentioned changes were captured by the DAFNE V project (Pace et al, 2007) in which Household Budgetary Surveys for the years 1994, 1995 and 2000 were analysed.

Furthermore, a gradual reduction over the years of small corner shops in some villages was noted, with a concurrent increasing trend among the population to depend for their daily food purchases on a few large suppliers. Efforts by government officials to exert any effective control on the local market as originally indicated by the 1990 National Food and Nutrition Policy, on the supply and availability of unhealthy food products was made difficult by the growth of trade agreements, common market(s) and trans-national marketing of food products and food chains as well as an overwhelming increase in the number of fast food outlets.

2.2.4. National Legislation, policies, strategies, committees and groups with a focus on diet, physical activity and health

In line with the values and principles expressed in international documents, the Government of Malta is committed to improve the health of its nation through food safety and nutrition policy and in promoting healthy living with a particular focus on vulnerable groups in the population. The adopted documents include:

- The National Breastfeeding Policy Consultation Document (2014) which reviews the National Breastfeeding Policy (2000)
- Food Safety Act (2004)
- A Sustainable Development Strategy for the Maltese Islands (2007)
- National Environmental and Health Action Plan (2010) (currently under review)
- A Strategy for the Prevention and Control of Noncommunicable Diseases in Malta (2010)
- The National Cancer Plan (2011)
- A Healthy Weight for Life Strategy (2012)
- National Environment Policy (2012)

The main National Committees set up include:

- Food Safety Commission (FSC)
- Intersectoral Committee for Counteracting Obesity (ICCO)
- Intersectoral committee on environmental health

Malta is also very active in the context of the European Union, namely at the High Level Group (HLG) on Nutrition and Physical Activity. This High Level Group seeks to find solutions to obesity-related health issues by:

- i. Offering an overview of all government policies on nutrition and physical activity.
- ii. Helping governments share policy ideas and practices
- iii. Improving liaison between governments and the EU Platform for Diet, Physical Activity and Health, so that relevant public-private partnerships can be quickly identified and agreed on.

2.3. Current Initiatives for Food and Nutrition in Malta

A large number and variety of initiatives have taken place over the last twenty years. These include research in the form of anthropometric BMI surveillance of school children, self reported adult BMI population surveys and a pilot anthropometric population survey. Prenatal maternal, breastfeeding and weaning programmes, are delivered by means of parent craft classes, breastfeeding walk-in clinics and NGO support in various localities.

National awareness-raising and education campaigns on healthy eating and physical activity take place on a regular basis and target both the general population as well as specific population groups. These have focused on the Mediterranean diet, and the regulation of portion sizes. Ongoing campaigns also promote seasonal fruit, vegetables and fish and waste reduction. About 22% of the amount of food purchased every week ends up as solid waste. Initiatives to minimise food waste will have an impact on sustainable food consumption in Malta (NSO, 2013). In this regard a strategy is being drafted by a committee set up by the Minister responsible for the Environment

Ongoing initiatives include the development of the skills required to encourage behaviour change and focus on cooking healthy meals for the family within a budget.

Weight management classes are available in the community for people who are overweight and obese and focus on the delivery of information and skills development on healthy eating and increased physical activity.

Relevant government departments implement European Union initiatives such as *Aid to the Deprived*¹ and the *School Fruit Scheme*. Community education and support takes various forms such as the local Farmers Market ensuring fresh and cheap fruit and vegetables directly from growers, and free weight management and aerobic classes in different communities.

Annex 3 of this document contains details of initiatives related to food and nutrition within the past 10 years from various Government entities. These target different population groups across all ages within different settings.

2.4. Sectors involved in the area of food and nutrition

The information included in this chapter in the area of food and nutrition is a result of a series of bilateral and multilateral meetings held throughout the summer of 2012, with the different stakeholders involved in the area of food and nutrition.

¹ The Aid to the Deprived Scheme which is fully funded by the EU, provides aid in the form of food products such as cereals, rice, pasta and jam to the most deprived within the community, including people living in poverty and families in difficulty. These are certified by the Department of Social Policy. The Scheme is administered by the Agriculture and Rural Payments Agency and the aid is distributed by participating organisations such as church parishes and other NGOs.

2.4.1. Ministry responsible for Health

Public health policy makers have a responsibility to act as advocates and to demonstrate stewardship and leadership for health across different departments and entities in both the public and private sectors (WHO, 2008). The Ministry for Health in Malta has developed policies and action plans aimed at improving the diet food choices of the Maltese population. These include the Healthy Weight for Life Strategy, the Noncommunicable Disease Strategy, the National Cancer Plan and the National Environment and Health Performance Review.

Health should also ensure that a national initiative to provide nutrition education is embarked upon. Nutrition education is any combination of educational strategies, accompanied by environmental supports, designed to facilitate voluntary adoption of food choices and other food-and nutrition-related behaviors conducive to health and well-being.” (Contento, I.R. 2008).

This definition implies three essential components

- a. an awareness-raising component to focus attention on nutrition and increase motivation to improve diets through effective education and communication strategies,
- b. an action component, where the goal is to facilitate people’s ability to take action to improve their diets, and
- c. an environmental component where nutrition educators work with policymakers at national and community levels to make healthy foods more accessible.

One of the proposed areas for action is to support a healthy start to life including better health for the mother and child. The percentage of infants with a low-birth weight in Malta stands at an average of 6.1% (NOIS 2012); whereas the breastfeeding rate at discharge from hospital is still rather low (56%) when compared to the recommended rate (90%) in the Breastfeeding Policy for Malta (Department of Health, 2000). In addition, the breastfeeding rate after six months was 38% (Attard Montalto et al., 2008). As recommended in the Healthy Weight for Life Strategy, the breastfeeding policy for Malta has been reviewed and has been published for consultation.

Strengthening primary health care services is viewed as another priority area of action for Malta, particularly the strengthening of nutrition services in the health sector since these are still lacking. In addition, offering a service of dietary and physical activity counselling at primary care level as part of a multi-disciplinary team of health professionals is considered to be an effective preventive approach to tackle early malnutrition and diet-related noncommunicable diseases. Within the Primary Care Services, healthy lifestyle and nutrition advice is offered by both general practitioners and community nurses trained in health promotion and healthy lifestyles skills. Within Secondary Care, the Dietetics Service provides specialised dietetic advice depending on the clinical needs of both inpatients and outpatients. Efforts to increase human resources are currently being made, due to the increasing demands laid on the service from an ageing population and increasingly complex chronic diseases.

2.4.2. Ministry responsible for Education

Education should ensure that schools influence food preferences, food choices, food consumption as well as behaviour related to physical activity (WHO, 2008). In Malta, nutrition education is included in the national curriculum for schools and has been recently revised, taking a cross-curricular approach. Food consumption in church and state schools is guided by the Healthy Eating Lifestyle Plan (HELP) (Ministry of Education, Employment and the Family, 2007). The HELP document lists permissible and prohibited food and drinks for consumption during school hours in kindergarten, primary and secondary schools. It also highlights health issues, diet, nutrition, food safety and hygiene, food preparation and cooking as part of a healthy lifestyle. The 2007 document is being reviewed. Although there are various school initiatives occurring, the need is felt to set up a formal evidence-based school nutrition programme to ensure sustainability, coherence and compliance.

The regulation of school tuck shops through respective tender agreements are in line with current healthy dietary recommendations. However there are problems with full compliance, as currently the Education Division monitors tuck shops for food safety only and not for nutritional purposes. Hence better monitoring systems of food and beverage items sold through school tuck shops and vending machines need to be put in place as recommended by the Performance Audit to improve nutrition in schools (National Audit Office, 2011).

The above initiatives should extend beyond the traditional primary and secondary school premises to cover establishments that provide services to children and adolescents such as child care centres, sporting facilities etc.

Other organisations within the education sector offer teaching related to nutrition. The Directorate for Lifelong Learning within the Ministry for Education and Employment offers part-time morning and evening courses in various localities and includes a course on cookery and nutrition, which focuses on teaching basic nutrition and some cookery skills for a nutritious diet. The Institute of Tourism Studies offers a range of courses within the hospitality industry at different levels (up to Malta's Qualification Framework Level 5), and prepares student for various employment settings, such as in food preparation, restaurant and hotel management, sports tourism and active leisure and other tourism areas.

The Faculty of Health Sciences within the University of Malta runs a Bachelor of Science in Food and Nutrition Studies and is developing separate postgraduate courses in dietetics and nutrition. Other Faculties within University provide different levels of training on nutrition to undergraduate students.

2.4.3. Media

The media, advertising and retail sectors and the food industry have an influence on dietary choices. Sometimes these tend to differ from the guidelines that public health specialists recommend (WHO, 2008). The Broadcasting Act (Chapter 350 of the Laws of Malta) transposes the EU directive on audiovisual media services which aims at:

- Protecting public health;
- Encouraging behaviour prejudicial to health or safety ;
- Respecting regulations on nutrition and health claims made on food.

Constant marketing and advertising media campaigns of High Fat, Sugar and Salty (HFSS) foods to children is hindering schoolchildren and their parents from adopting healthy eating habits. In 2010, the Sixty-third World Health Assembly endorsed a set of recommendations on the marketing of foods and non-alcoholic beverages to children (resolution WHA63.14). Currently an exploratory study is being undertaken to analyse the type of food and beverage advertisements broadcasted on three Maltese TV channels. The results of this study are expected lead to the formulation of guidelines to fully implement the Audiovisual Media Services Directive (Directive 2010/13/EU).

2.4.4. Ministry responsible for the Environment

2.4.4.1. Water Supply

A safe, reliable, affordable and easily accessible water supply is essential for good health. Inadequate water supply may limit productivity. Increased water production through desalination processes has nowadays made shortages of the public water supply in Malta rare. Sustainability is a national major challenge in Malta due to the fact that natural water resources are scarce as well as due to the nature of local geology, other natural characteristics and changes in climate. In Malta, practically all the population has access to potable water and sanitation in all settings (homes, schools, workplaces and places of entertainment) (NSO, 2010). During discussions of the stakeholder group, the lack of sources of drinking water in the main areas of schools was identified as an area for action since in most schools water taps are available only in toilet areas. The education sector together with other relevant stakeholders must provide readily accessible drinking water within main areas of schools to complement the promotion of drinking water instead of sugared drinks.

2.4.4.2. Waste Management

According to the results of the Household Waste Composition Survey (NSO, 2012), food remains accounted for more than half the daily household waste generation in all survey weeks. This was followed by recyclable materials, of which paper and cardboard formed the dominant category. A comparison of the 2002 and 2011/2012 waste composition averages shows that the share of paper and cardboard went up most, by 4.9 percentage points from 12.7% to 17.6%; whereas the food remains fraction declined by 7.5 percentage points to 52.1% of household waste. These indicate that efforts by the relevant stakeholders to educate the public on waste management are achieving some good results, while paper and cardboard waste is increasing. Data on the amount of waste generated from foods consumed as takeaways which would give an indication of takeaway consumption trends in the Maltese population is not available. It is therefore important that food waste surveys are conducted on a larger scale and with more frequency; in accordance with Objective 1 of the WHO European Region Food and Nutrition Action Plan 2015-2020. This will not only be beneficial to health policy makers but will also be

valuable for the Environment sector to extrapolate reliable inferences and trends of the type and quantity of food becoming waste, thereby focusing targeted action in this regard. This will also offer guidance for recommendations on the purchasing of appropriate quantities/volumes of food to foster a healthy diet while reducing the production of food waste. Future educational campaigns on waste management could further specifically emphasise waste reduction of food packaging and food remains. It may include ideas of how to pick food products with less packaging while shopping such as opting for one large-sized package instead of individually packaged portions; buying in bulk; preparing one's own meals/snacks instead of ready-made or take-away food as well as further emphasise the need to use food remains as compost in kitchen gardens in households and other settings. Such approaches should also be encouraged within the food industry.

2.4.5. Ministry responsible for Agriculture and Fisheries

Public health objectives of achieving food safety and quality should also become objectives in the agriculture and fisheries sector. This would result in changes in primary production, food processing, distribution and retail activities. This is achievable by offering production incentives, establishing infrastructure and providing services, issuing regulations, education/awareness raising on nutritional and sustainability issues and facilitating dialogue between the private sector and public bodies (WHO, 2008).

The Department of Agriculture in Malta within the Ministry for Sustainable Development, the Environment and Climate Change (MSDEC) constantly tries to promote the introduction of improved methods of production in agriculture, horticulture and animal products. The Department emphasises the protection of the health of the producer and the consumer as well as safeguarding the rural environment.

Initiatives by the Information and Promotion Unit within the Ministry for Sustainable Development, the Environment and Climate Change help to promote the production and accessibility of fresh local produce. Future agricultural programmes should include nutrition objectives and need to take into account the changing food and nutritional demands to ensure that the synergies between agriculture and nutrition are successful and lead to better development outcomes. This requires closer collaboration than that achieved so far between the sectors for nutrition/health and agriculture and fisheries. A good start to future collaboration between sectors, particularly the agricultural and health sectors would be to increase the nutritional knowledge-base of local food producers. Better food labelling and clear, affordable pricing of agricultural produce and fish could generate greater interest in such products leading to their increased consumption.

The EU initiatives and projects embarked by the MSDEC – Paying Agency help to increase the nutritional status of Maltese students and adults. Future incentives can focus on encouraging more young people to take up farming as a career, offering financial incentives for the procurement of land, as well as better training and education opportunities. Other incentives can assist in encouraging the production of wholesome food products, in line with issued dietary guidelines; thus compatible with the prevention of noncommunicable diseases.

One drawback of the EU Aid for the Deprived Scheme is that it excludes the distribution of fresh food items including fresh fish, vegetables and fruit. Increasing agricultural

production, while considered vital in building sustained macro-economic growth in both developed and developing countries can also support nutritional improvements through the reduction of poverty. However to improve nutritional outcomes of the poor, agricultural production alone must be complemented by other interventions that address other determinants of nutrition such as appropriate child-feeding practices and better access to healthcare to reduce current levels of morbidity.

2.4.6. Ministry responsible for Social Affairs

2.4.6.1. Poverty and health

There exists a strong correlation between poverty and social exclusion and physical and psychological well-being. Acknowledging the social determinants of health and well-being and addressing poverty-related health challenges thus constitute important elements in the promotion of health and nutrient equity.

Although Malta's at-risk-of-poverty or social exclusion rate² is somewhat below the EU average, (23.1% against an EU average of 24.8% in 2012) in line with the trend experienced in other EU Member States, the at risk of poverty rate for children, elderly people and other vulnerable groups, particularly those who are unemployed or living in jobless households, tends to be somewhat higher than that of the general population. In 2012, the at-risk-of-poverty rate for children stood at 23.1% (EU28: 20.8%) while for elderly people it stood at 17.3% (EU28: 14.5%). On the other hand, it stood at 48.2% for the unemployed and 71.3% and 36.5% for those living in jobless households with or without dependent children respectively. In 2012, the material deprivation rate of Maltese households stood at 18.8% (EU28: 19.7%), whereby the severe material deprivation rate stood at 8.0% (EU28: 9.9%). 13.1% of the Maltese population report not being able to afford a meal with meat, chicken, fish or a vegetarian equivalent every second day (Eurostat, 2012). Furthermore, statistics issued by NSO from the Survey on Income and Living Conditions (2012) put this figure at 13%.

Apart from the fact that the risk of poverty and social exclusion tends to be higher among certain social groups, such risk also tends to be disproportionately distributed across different geographical areas. Indeed, in 2012, the at-risk-of-poverty or social exclusion rate was significantly higher (32.3%) in the Southern Harbour region whereas it was lowest for those residing in the South Eastern, Gozo and Comino and the Northern regions.

In view of their higher risk of poverty and social exclusion, children, elderly people and people living in jobless households constitute key vulnerable groups within the Maltese context. Malta's National Reports on Strategies for Social Protection and Social Inclusion for 2004-2006, 2006-2008, 2008-2010, 2012 and 2013, as well as the National Reform Programme for 2013 indeed recognise such groups as particularly vulnerable populations, since their life circumstances may place them at higher risk of poverty and social

² The at-risk-of poverty or social exclusion rate is defined as the share of people (*aged less than 60*) who are either severely materially deprived, at risk of being poor, or else living in a household with a low work intensity.

exclusion. These populations are also main target populations of the ‘Green Paper: A Framework for Poverty Reduction and for Social Inclusion’ launched by the Maltese Government in January 2014 with the aim of consulting and addressing issues of poverty and social exclusion within the local context for the next ten years. The document outlays a comprehensive approach on six dimensions of well-being, including health (personal and environmental); income and social benefits; education; social services and housing, and; employment and culture.

Apart from children, elderly people and the unemployed, other social groups which are identified to be at greater risk of poverty and social exclusion include; the long term unemployed, single parents, asylum seekers, persons with mental health and addictive behaviour difficulties, victims of domestic violence, and persons with a disability.

2.4.7. Ministry responsible for Home Affairs and National Security

2.4.7.1. Migrants

The presence of refugees in Malta has been registered since 1994 and since then, their number has followed an upward trend. Migrants normally originate from Eastern Europe or Sub-Saharan Africa fleeing war or seeking entry into Europe for economic reasons. This brings with it health related challenges in the form of potential micro-nutrient deficiencies as well as communicable diseases. In 2008, upon request by officials in charge of migrants, the Health Promotion and Disease Prevention Directorate forwarded nutritional advice on meal provision for migrants living in detention centres.

CHAPTER 3

GUIDING PRINCIPLES

3.1. Whole of government approach

“A healthy population is a key requirement for the achievement of society’s goals. Reducing inequalities and the social gradient improves health and well-being for everyone. Good health enhances quality of life, improves workforce productivity, increases the capacity for learning, strengthens families and communities, supports sustainable habitats and environments, and contributes to security, poverty reduction and social inclusion” (Adelaide Statement on Health in All Policies 2010 - WHO).

The Health Promotion and Disease Prevention Directorate holds the leading role in the Food and Nutrition Policy and Action Plan for Malta and acts as an advocate to other sectors across government. It aims at increasing awareness in non-health sectors on the influence of their actions on the health of the population. It also works with other sectors in adopting the health in all policies approach to ensure that their policies and actions have a positive effect on health and minimise any negative effects.

Diet and food choices for the population lie largely outside the influence of the health sector. These choices are related to factors such as trade, marketing and fiscal policies, access to education and healthcare, climate change, agriculture, catering industry and media.

3.1.1. Trade and Marketing Policies

Trade policy has been suggested as a tool for influencing nutrition (WHO European Charter on Counteracting Obesity, 2006; Vienna Declaration on Nutrition and Noncommunicable diseases in the Context of Health 2020, 2013). Research has determined that foods high in fat, sugar and salt contribute to diet-related diseases and mortality. These foods, to date, continue to be traded and marketed without regard to their health impact. The use of existing national and international legal and other regulatory instruments to restrict trade of poor quality foods on the basis of health protection has been advocated in international fora. The basis for this is that such food products can be considered ‘unsafe’ due to their proven contribution to unhealthy diets, which are one of the major risk factors for noncommunicable diseases.

Malta does not yet have legislation which aims at reducing the impact of the marketing of HFSS (High Fat, Sugar and Salt) foods to children, although the government follows a policy to reduce the impact of non-broadcast forms of advertising of HFSS foods to children – for example, by not allowing HFSS foods to be used as a sponsorship for health campaigns or any initiative that takes place within schools or that involve children. Given their vast availability and easy accessibility, a regulatory system for food advertising should be developed as a tool for Malta to reduce marketing pressures on consumers particularly children.

3.1.2. Fiscal Policies

Malta is a signatory to the Vienna Declaration (2013) and the European Charter on Counteracting Obesity (2006) which make a special emphasis on subsidies, reformulation

and marketing restrictions. The Healthy Weight for Life Strategy for Malta (2012) highlighted the use of economic instruments and regulations to reverse the global obesity epidemic in the short term without harming or disadvantaging communities. Malta recognises the development of fiscal measures to promote health including tax policies, subsidy policies and employer tax incentives in its fight against diet-related NCD and obesity. In fact, a variety of initiatives including research studies to have a better understanding of the situation are suggested. These include:

- To explore the possible variations, by locality, in the availability of shops selling fast food and vendors selling fresh fruit and vegetables.
- To analyse the possible impacts of subsidies on certain healthy foods and taxes on specific unhealthy foods and drinks, particularly their effects on people's behaviour and income redistribution in order to determine their overall feasibility in Malta. Such an analysis will seek to ascertain whether food subsidies and/or taxes should be implemented and if this should be the case, which products should be affected and by how much. Such a study will be based on the results obtained from the National Food Consumption Survey.
- To carry out feasibility studies on incentives to increase the availability of healthy food outlets e.g. Smoothie bars, fresh fruit and vegetable salad bars, and restrictions related to outlets selling fast food particularly in the vicinity of schools.
- To examine further employer fiscal incentives to motivate employees to adopt healthier choices (Healthy Weight for Life Strategy for Malta, Superintendence of Public Health, Ministry for Health, the Elderly and Community Care, 2012).

3.1.3. Climate Change

Human health is at risk from climate change which is also affecting Malta (*Health Effects of Climate Change in the Maltese Islands, 2010*). Malta is vulnerable to the effects of increasing temperatures, extreme weather events, influences on water quality and quantity and ecosystems changes. This vulnerability is also recognised in the National Environment Policy (2012) which also emphasises that health is a priority in addressing climate change.

In Malta an increase in summer temperature and other extreme events, are of direct concern to human health. Climate change will have a major impact of nutrition security on a world-wide level. Some activities in the agriculture sector will benefit from climate change impact, while others will experience disadvantages (*Sectoral impacts of climate change in Malta*, Malta Resources Authority) Possible reduced availability of local fresh produce and increasing prices will exacerbate malnutrition issues in the Maltese population and impact on obesity rates. It will seriously undermine health promotion and disease prevention strategies which are seeking to halt and reverse obesity trends. This will have a disproportionate effect on vulnerable groups, such as those on low income including children.

The importance and complexity of nutrition security necessitates that Malta develops further measurement, policy formulation and implementation in this area. In May 2012,

the Ministry for Resources and Rural Affairs published the National Climate Change Adaptation Strategy. The National Adaptation Strategy adopts a holistic approach to climate change adaptation in Malta, identifying climate change impacts with particular reference to health among other factors. It seeks to address recommendations in various sectors which are vulnerable to climate change, viz. water, agriculture, human health and tourism. The strategy also addresses the financial impacts as well as any sustainability issues.

3.2. Focus on Equity

The WHO Commission on Social Determinants of Health (2007) concluded that ‘social injustice is killing on a grand scale’. Specific attention must be paid to whether social determinants such as employment, gender, socioeconomic status, ethnicity, migrant status and/or level of education and their distribution affect people’s opportunities to make and sustain healthy choices. In particular, attention is to be given to how it affects their capacity to choose healthier diets and to achieve appropriate levels of food security that allow the nation to fully develop its human capital.

In terms of equity in Malta, addressing social determinants would be a step in the right direction as 15% are at risk of poverty. 12% of Maltese people are illiterate whereas 6.7% are unemployed (NSO,Q3, 2013). The socioeconomic status of an individual is determined by the person’s occupation, education and income. There has been a consistent inverse relationship between the socioeconomic status and obesity amongst women from upper and upper middle income countries. This consistency is not as clear amongst men and children. Countries with the highest levels of income inequality had the highest levels of obesity among both males and females. Whereas obesity was previously a sign of affluence in middle and low income countries, nowadays the trend is changing and obesity is tending to shift towards groups of lower socio-economic status as countries’ GDP increases (World Health Organization, 2007).

In Europe, obesity in over 20% of men and 40% of women is attributable to inequalities in socio-economic status (Robertson et al, 2007). The latter also applies to obesity in children and adolescents in that higher rates of obesity are found in more deprived areas. In Malta, an inverse relationship was seen between educational level and obesity rates, with an increasing body mass index (BMI) with decreasing level of education. However, although the average BMI was lowest amongst individuals with a tertiary education, the average BMI for the group was still 25.9kg/m² (overweight) (Health Interview Survey, Department of Health Information and Research, 2008). It is imperative that social determinants are addressed in order to reduce health inequalities. This has been advocated by the United Nations Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases (2011), the Health 2020 Policy Framework, the Vienna Declaration and the European Food and Nutrition Action Plan 2015-2020.

3.3. Life Course Approach

Exposure to the risk of noncommunicable diseases accumulates throughout the life course, starting with influences that occur during preconception, pregnancy and continuing through early childhood, adolescence, adulthood and old age. The Healthy Weight for Life Strategy for Malta (2012) highlights the importance of healthy eating throughout an individual's life course.

3.3.1. Pregnancy, Breastfeeding, Early Years

There is growing scientific evidence of the link between pre pregnancy factors and early life conditions (intrauterine and infant) and the development of chronic noncommunicable diseases later in life (mainly obesity, Type II diabetes mellitus, cardiovascular diseases and stroke, cancer) (Kiani A, Nielsen MO, 2011).

The Healthy Weight for Life Strategy (2012) recognises the influence of the mother's body weight prior to conception and during pregnancy as well as the effect of weight on the neonate at birth. The importance of pregnant women being aware of the importance and benefits of maintaining a healthy weight before, during and after pregnancy is also emphasised. Moreover, exclusive breastfeeding for the first 6 months of life is advocated (A Healthy Weight for Life: A National Strategy for Malta, Superintendence of Public Health, Ministry for Health, the Elderly and Community Care, 2012; National Breast Feeding Policy Consultation Document 2014-2020, Health Promotion and Disease Prevention Directorate, 2014). After six months, infants should be fed adequate and safe complementary foods while continuing breastfeeding for up to two years or beyond. Complementary foods should be rich in nutrients and given in adequate amounts. At six months, caregivers should introduce foods in small amounts and gradually increase the quantity as the child gets older.

3.3.2. Healthy Eating during School Years

The Healthy Weight for Life Strategy emphasises the promotion of healthy eating throughout school years. This is because improving the nutritional status of school-age children is an effective investment for healthy future generations. As initiatives in this direction, the Healthy Eating Lifestyle Plan (HELP), the School Fruit Scheme and the School Milk Scheme are being implemented.

3.3.3. Healthy Eating during Adulthood

The Healthy Weight for Life Strategy (2012) promotes healthy eating amongst adults. The strategy focuses on consumer education in order to improve food choices made by consumers and thereby increasing fruit and vegetable intake as recommended in Malta's National Cancer Plan 2011 – 2015. The issue of alcohol consumption and its effects on weight gain is also highlighted in the Healthy Weight for Life Strategy and it is recommended that such a subject should be included in awareness campaigns. A National Alcohol Policy is also being drawn up.

Healthy eating at the workplace is a way of changing adult health behaviour. The setting up of a Healthy Workplace Scheme was suggested in the Healthy Weight for Life Strategy. Raising awareness of the potential costs of obesity and related chronic diseases to the operation of businesses is proposed. Thus, the implementation of policies and practices that can contribute to promoting and maintaining a healthy lifestyle amongst employees is recommended. This would not only be of benefit to the employees but also to their employers.

There are other important policy initiatives that can be adopted to improve the eating habits of adults. These policies will need to be targeted at the reduction and eventual banning of the use of trans fats in food preparation, and the reduction in the overall consumption of salt, sugar and saturated fats.

3.3.4. Healthy Ageing

A healthy ageing experience consists of health promotion throughout life, a health-supporting environment that promotes coping with disability, social inclusion and protection and appropriate and accessible social and health services.

The greatest challenge over the coming years is maintaining health and maximising the number of years lived free from disability. A healthy lifestyle especially eating well and remaining active helps individuals to stay fit and healthy for as long as possible thereby enabling them to continue living in the community. Hospitals and homes for older people should be showcases of good practice and ensure that all food offered is in line with healthy eating guidelines especially in view of the potentially already compromised health status of many older persons.

In Malta, the Ministry for Energy and Health has the remit of ensuring that menus served within homes for the elderly meet food safety standards and are in line with healthy eating guidelines. Moreover the Health Care Standards Directorate, as part of the licensing procedures for both public and private homes, is monitoring nutritional guidelines for homes for older people that were put in place in 2009.

3.4. *Strengthening Health Systems*

Further development of primary health care services, together with public health services, is essential for primary prevention, early diagnosis and effective interventions. Nutrition capacity, and health promotion particularly at the primary care level, can be strengthened by means of capacity building and training.

Primary care plays a crucial role in providing personal integrated care which takes into account the social, cultural and economic environment within which the individual and his family live. In addition to the services already available, further development of preventive services is being planned. The NCD Strategy advocates the provision of new and enhanced preventive services.

The Health Promotion and Disease Prevention Directorate organises continuing professional development programmes for different professionals. The Healthy Weight for Life Strategy strongly recommends training and guidelines for health professionals in primary care, physical educators and coaches as well as in-service courses for teachers. This may improve the delivery of holistic advice and management on issues related to nutrition, physical activity and weight management. This will also ensure that the same key messages are promoted throughout all disciplines.

CHAPTER 4.

**SCOPE, VISION,
GOALS, OBJECTIVES
AND
POPULATION
NUTRIENT GOALS**

4.1. Scope

This policy and action plan addresses the main public health challenge facing the Maltese Nation in the area of nutrition and food security that are associated with diet-related noncommunicable diseases and conditions including obesity whilst promoting better health and wellbeing for the Maltese population.

This policy will also revise the National Food and Nutrition Policy and to set up an action plan by assessing the current situation, prioritising options and setting actions.

4.2. Vision

Improved dietary habits to maximise health and well-being.

4.3. Goals

- To assist the Maltese population towards adopting a healthy dietary pattern across the lifecourse;
- To encourage all government entities to place health in the consideration of all policies related to the production, marketing, sale, provision and choice of food;
- To be responsive to the links with the social determinants of health and health inequalities and focus on the most vulnerable groups;
- To implement dietary intake and nutritional status surveillance and monitoring of the population with a special focus on children;
- To accelerate action in the field of obesity prevention and control by means of the implementation of the actions proposed in the Healthy Weight for Life Strategy, with a focus on children, comprehensive preventive and treatment approaches and intersectoral action under the leadership of the Ministry for Energy and Health.

4.4. Objectives

- To promote healthy nutrition as the basis for healthy behaviours for the population of Malta;
- To increase the vegetable and fruit intake in the population;
- To reduce salt intake;
- To reduce the consumption of foods high in saturated fats, trans-fats and sugars;

- To address inequalities in food accessibility;
- To halt and reverse the obesity trend in children, adults and older persons.

4.5. *Population dietary and nutrient goals*

To update the National Food Guidelines and establish nutrient goals for the Maltese population based on the evidence obtained from the National Food Consumption Survey.

4.6. *Timing*

This policy will be implemented between 2015 and 2020.

CHAPTER 5

IMPLEMENTATION OF THE POLICY

5.1. Priority Action Areas

On the basis of a situation analysis carried out, the following areas for action have been identified:

1. To develop a communication strategy for the Food and Nutrition Action Plan engaging all sectors and stake holders.
2. To develop a comprehensive system for surveillance and monitoring of food consumption in order to inform on the evaluation of this action plan. The system will incorporate: COSI, HBSC, HIS, EHES, and a new nutrition surveillance programme for all ages that will include information on dietary behaviour. Laboratory studies are also necessary to provide food composition knowledge of local food products.
3. To develop the capacity for research in the area of food and nutrition. A capacity-building programme for nutrition research is required and must deliver adequate training to upgrade local knowledge in the field of nutrition research.
4. To review the Maltese Food-based Dietary Guidelines across the life course, and to base these on a systematic review of evidence on a healthy diet especially the Mediterranean diet adapted to reflect local Maltese culture. The guidelines need to provide detailed guidance to both professionals engaged in nutrition-related activities and the general population on optimal dietary habits. They are to be formulated by a multi-sectoral, multi-disciplinary group and will be based on the findings of the National Food Consumption Survey (2014-2016).
5. To carry out feasibility studies on fiscal/price policies in order to create a framework of incentives to ensure affordability and accessibility of healthy food for all the Maltese population.
6. To engage with agriculture and fisheries on the promotion of, accessibility and affordability of preferably fresh fish, fruit and vegetables.
7. To introduce agreed mechanisms to reduce salt and sugar, limit saturated fat and eliminate trans fatty acids existing both in local and imported food products. Changes within processed and pre-packed food to reduce salt, sugar and fat intake of the population with minimal change in taste, resulting in health benefits in terms of reducing risk factors responsible for noncommunicable diseases.
8. To evaluate and monitor the salt intake of the Maltese population and salt content of all local food products. To continue raising awareness on salt reduction among the general public and to work in partnerships with relevant public and private stakeholders to offer salt-free or salt-reduced local food products.
9. To support a healthy start to life by continuing to promote, support, and protect breastfeeding through the adoption and statutorisation of the WHO International Code of Breastmilk Substitutes and related products and enforcement of this legislation. To create incentives within workplaces and public places to support and protect breastfeeding mothers in the community and at the workplace with the aim of achieving the desired target for exclusive breastfeeding up to six months of age.

10. To further consolidate current school initiatives in intended to promote and protect healthy diets, drinking of plain safe water and physical activity through the development of a concerted evidence-based School Nutrition Programme.
11. To create awareness of the negative impact intake of sugary drinks has on oral health and to monitor and evaluate the consumption of sugary and energy drinks. As described in the Noncommunicable Disease Strategy for Malta (2010), the dentition of schoolchildren can be highly improved through reduced sugar intake from food and beverages. Surveys have described the very high daily intake of sugary carbonated drinks, leading to weight gain and dental caries. To identify and address any issues of potential malnutrition including macro and micro nutrients within vulnerable groups such as older age groups in all settings (hospital, homes, community) by ensuring the affordability and accessibility of food for older people thus guaranteeing a well-balanced nutritious diet.
12. To enhance workplace health promotion with regards to food availability and consumption. The workplace allows access to gainfully employed individuals who are usually in good health. It is a unique opportunity to increase awareness and provide life skills (particularly among males) to avoid the main risk factors for noncommunicable diseases such as unhealthy diets, lack of physical activity, excess weight, binge drinking and smoking.
13. To evaluate, reduce and monitor the impact of marketing pressures on children from the media (including social media). Further action is needed to ensure that legislation is in place and enforced.
14. To improve the capacity of the health systems to adequately address the health needs of the population in the area of nutrition:
 - Improved training of health care professionals;
 - Referral of patients to the appropriate services;
 - Ensuring adequate numbers of registered nutrition and dietetics professionals in both primary and secondary care.
15. To ensure that this action plan is monitored and evaluated in order to ensure that actions within the different settings are achieved according to the timeframe set and within the allocated budget. Coherence with the Noncommunicable Disease Strategy (2010), the National Cancer Plan (2011), the Healthy Weight for Life Strategy (2012) and the National Breast Feeding Policy (2014) must be ensured.

5.2. Implementation Plans for the priority actions

Multi-sectoral stakeholders were invited to attend a two-day workshop co-organised by MHEC and WHO with the aim of developing implementation plans for the priority actions of the Food and Nutrition Action Plan for Malta. The workshop took place on the 25th and 26th October 2012. The tool used was the ANGELO framework which was developed to help communities analyse the environmental influences affecting their physical activity and eating pattern and then to work out which factors they need to address to more readily achieve an effect. Stakeholders were asked to score the sixteen proposed action areas, for importance and changeability and then rank them accordingly.

From the resulting score, the first five action areas were identified as priority action areas for food and nutrition for Malta. Each of the five identified priority action areas was discussed by the stakeholders in three distinct working groups so as to prioritize for behaviour, environment and knowledge skills. The outcome of these discussion groups eventually led to the formulation of the implementation plans. These identified five priority action areas were:

1. To increase the information about the food and nutrition action plan to all stakeholders;
2. To improve the availability and accessibility of drinking water in schools;
3. To increase the number of mothers that exclusively breastfeed up to six months;
4. To reduce the availability and intake of foods high in fat, sugar, and salt in schools;
5. To develop a comprehensive surveillance and monitoring system on food consumption.

5.2.1. To increase the information about the food and nutrition action plan to all stakeholders

Rationale: The information on diet and food is vast. Establishing a dialogue forum with respect to diet and nutrition between the different stakeholders will ensure that the information provided by all the various actors are in line with the health authorities' recommendations on nutrition and dietary advice. Apart from campaigns targeted at the general population, specific actions targeted at specific population groups are also to be considered. The involvement of peers to disseminate the information among the group is to be encouraged. Such initiatives not only raise the awareness but will also contribute to achieving the attitudinal and behavioural changes necessary to ensure healthier diets.

- To develop and implement a comprehensive plan for information and communication in the area of nutrition;
- To review the food based dietary guidelines previously developed in the 1990 Food and Nutrition Policy for Malta;
- To further develop the web site www.ehealth.gov.mt with respect to nutrition and diet;
- To ensure a platform with respect to nutrition and diet to enable dialogue between the authorities, NGO's and relevant actors in the private sector;
- To promote the Mediterranean diet as a guide to healthy eating and to encourage the consumption of moderate portion sizes.

5.2.2. To promote plain water consumption in schools

Rationale: Maltese school-aged children are high consumers of sugary drinks on a daily basis compared to other countries participating in the HBSC studies; with 49% of males and 34% of females aged 15 years consume soft drinks on a daily basis (HBSC, 2010). Children and adolescents who regularly drink soft drinks and other sweetened drinks are more likely to be overweight and are more prone to dental caries. Drinking plain water instead of sweetened drinks can help to prevent dental problems while contributing towards better weight management amongst children and adolescents. One perceived barrier to why many children and adolescents avoid drinking tap water was because water taps can only be found in school toilets; perceived as dirty and unattractive; hence the need to lobby key stakeholders about the importance of good accessibility to drinking safe plain water from drinking fountains in schools. In addition, an education campaign highlighting the benefits of drinking water to children, teachers and parents is being proposed.

- To improve the quality and accessibility to drinking plain safe water in primary and secondary schools;
- To ensure water accessibility at all times to promote health and provide a healthy learning environment within schools;
- To increase awareness among children and adolescents of the health benefits of drinking adequate amounts of water regularly throughout the school day;
- To ensure that areas around drinking fountains are kept clean and attractive at all times throughout the school day.

5.2.3. To increase the number of mothers that exclusively breastfeed up to six months

Rationale: One of the most effective measures for preventing illness and promoting health in the child, with health benefits later in life is via breastfeeding. In view of the health gains associated with breastfeeding, society and health services are responsible for making breastfeeding an easy choice for women wishing to breastfeed. All health clinics but especially child health services have the vital role of supporting the maintenance of breastfeeding and good dietary habits in the family because of their early and frequent contact.

- To enhance promotion of breastfeeding during the antenatal period and first months of life;
- To provide updated information material on breastfeeding, infant and young child nutrition to mothers;

- to encourage peer involvement of mothers with different social and professional backgrounds;
- To set up a Hospital Breastfeeding Policy thus ensuring all health professionals advocate breastfeeding as part of accreditation under the Baby Hospital Friendly Initiative;
- To extend the current hospital-based breastfeeding services to a community setting;
- To continue promoting a breastfeeding friendly environment within our society e.g. breastfeeding rooms within public institutions and the private sector;
- To continue to create incentives at the place of work that promote breastfeeding; including breastfeeding breaks and adequate facilities for breast feeding;
- To update existing legislation in line with the International Code on Marketing of Breast milk substitutes (WHO, 1981) and subsequent WHO resolutions and set up a structure to monitor and ensure its enforcement;
- To work with the Health Information and Research Directorate so as to collect National breastfeeding statistics at 4 months, 6 months and 1 year in addition to those at discharge from hospital;
- To include knowledge on breastfeeding in the health/nutrition education programme within primary and secondary schools;
- To offer life-learning courses on breastfeeding within the community and specific courses targeting vulnerable groups i.e. single or teenage mothers as well as grandparents;
- To increase awareness and provide the necessary professional development for health care workers;
- To review the Breastfeeding Policy for Malta (2000).

5.2.4. To reduce the availability and intake of foods high in fat, sugar, and salt in schools

Rationale: The HBSC studies clearly showed that very often, Maltese students are replacing wholesome nutritious foods with processed energy-dense foods and beverages that eventually have a harmful effect on growth and development, attention span and mood. (Behrman J, 1996) In addition, excessive consumption of foods high in sugar can contribute to childhood obesity and tooth decay and caries. Facilitating the provision, accessibility and affordability of wholesome nutritious foods within school premises will help in steering children and adolescents to develop good eating habits that will be kept later on in life. Children from families with little awareness on healthy eating and living, benefit greatly from healthy food programmes for all in schools. Such measures will help in reducing social inequalities in health (Whitehead M, 2007).

- To implement the revised HELP document as a healthy eating school policy document;
- To provide lunch breaks that ensure sufficient time for children to consume their food in addition to play;
- To provide adequate training for school tuck-shop and vending-machine operators on how to provide better food products in line with dietary guidelines as recommended by Maltese Health Authorities and as outlined in the revised HELP document (2014);
- To ensure that the scope of current food safety inspections is extended to include the nutrition aspects besides safety and hygiene when carried out for available foods in pre-schools, schools, and before- and after-school programmes;
- To continue participation in and further enhance the EU School Fruit scheme among primary school children;
- To encourage the extension of the EU scheme to include secondary schoolchildren as well as increase the number of days in the week on which there is distribution of fruit and vegetable to schoolchildren;
- To provide training sessions by the relevant health authorities, for teachers and other relevant school staff so as to promote and facilitate the adoption of a nutrition-friendly school environment;
- To encourage resource allocation for practical training in Food and Health in order to enhance culinary skills e.g. the setting up of more food labs as well as the free provision books on healthy eating and cookery for use by educators, students and parents;
- To educate children on coping with the pressures from the marketing of foods high in fat, sugar and salt;
- To assess the feasibility of regulatory measures to restrict access by children to nutritionally inappropriate meals and energy-dense snack foods from retail outlets located in the vicinity of schools;
- To regulate audiovisual commercials for foods high in fats, sugar and salt based on WHO Set of recommendations on marketing of foods HFSS and using the nutrient profiling developed by some member states of the WHO European Region and the Regional Office.

5.2.5. To develop a comprehensive surveillance and monitoring system on food consumption

Rationale: Research to obtain new knowledge is a vital part of health promotion and disease prevention work. However, dietary data is also used for non-health purposes. Malta's National Statistics Office regularly conducts interview surveys about health and living conditions among nationally representative samples of adults. Regular health surveys include COSI, HBSC, HIS and EHES. National dietary surveys however are lacking. Such surveys make it possible to estimate the intake of calories and nutrients by various age groups and vulnerable groups in the Maltese population. In addition, statistics on national food supplies, market surveys and consumer surveys of private households can be used to describe trends in the Maltese diet as well as to reduce social inequalities in diet. Dietary data will also provide a basis for informed decision making and to further develop cost-effective food and nutrition policies and regulation. It also provides a basis for monitoring and evaluation of nutrition interventions.

- To strengthen research on the relation between diet and health
 - To review and analyse international approaches to food and nutrition monitoring and surveillance systems;
 - To set up a steering committee, made up of the relevant stakeholders to draft a framework and implementation plan for a national comprehensive surveillance and monitoring system on diet and health;
- To ensure expert studies and updated official recommendations in the area of food and nutrition;
- To promote research stimulating the development of healthier food products including fresh local food produce;
- To provide knowledge on what affects people's food choices and dietary habits among the various population groups so as to improve the consumption of affordable nutritious balanced meals among Maltese households.

5.3. Development and Implementation of Action Plan

The implementation of the Food and Nutrition Action Plan will be the responsibility of an Implementation Group that will be set up with the responsibility for developing specific activities that have to be undertaken within the priority areas of action identified in this document. The Implementation Group will work with the relevant sectors and stakeholders in developing the specific actions and establishing the relevant time frames within which the various actions are to be completed. The Implementation Group will determine the estimated cost of the initiative undertaken and ensure that the necessary resources are requested and actually allocated. It will ultimately be responsible to ensure that the programmed actions are implemented in a timely manner.

Although some aspects of the implementation have already been initiated, the Implementation Group will ensure that such activities are co-ordinated and integrated into the overall plan. This will require co-ordination with the implementation groups set up for the other strategies being implemented within the Ministry.

5.3.1. Stakeholders engagement

A number of stakeholders were consulted during the drafting of the Policy and Action Plan consultation document. During the launch of the consultation document the views of a much larger number of stakeholders, including the general public, were requested. A number of workshops as well as several bilateral meetings with stakeholders have been held and the outcome of such consultations have been included in this document. Some areas or initiatives for specific action have also been discussed and will be taken into consideration by the Implementation Groups.

5.3.2. Monitoring of Action Plan

As stated above, the Implementation Group will be responsible for setting measurable targets for the relevant action areas and for the monitoring of their implementation. The Group will also be responsible for the identification of the appropriate indicators to measure the achievement of the targets outlined. A mid term review will take place in 2017 followed by an end of plan evaluation in order to assess the extent of its implementation as well as measure the outcomes. There is no doubt that over these years significant attention will need to be paid to research as the lack of data will render such reviews difficult to carry out.

Annex I

Demography

The Maltese Islands consist of the islands of Malta, Gozo and Comino. Malta is located in the centre of the Mediterranean Sea with Sicily 93 km to the north, Africa 288 km to the south, Gibraltar 1826 km to the west and Alexandria 1510 km to the east. The total land area is 315 km². With a total population of Malta at 417,432 (NSO 2011) Malta remains by far the most densely populated European Union (EU) Member State, with an average of 1,325 residents per square kilometre. It is considered as one of the highest country population densities in the world. Malta scores high on the Human Development Index with a life expectancy at birth of 78 years for males and 82.2 years for females with a median age at death for males of 77 years and for females 82 years (National Mortality Register, 2012). The infant mortality rate is 2.6/1000 live births (National Mortality Register, 2012). The birth rate has been steadily declining and is currently one of the lowest in the Mediterranean countries. In 2011 there were 10.3 live births/100,000 population (NOIS, 2012). In the same year, 51.2% of the delivered infants were male. The crude death rate in 2012 was 815 per 100,000 (National Mortality Register, 2012). The percentage of young people aged 15-29 of the total population stands at 20.5% (NSO, Census of Population and Housing, 2011).

Malta has several natural harbours. The climate is warm with a mean air temperature of 19.2°C with an average annual rainfall of 529.6 mm (NEHAP, 2006). Malta is heavily dependent on imports due to the lack of any natural resources including food products. Malta has 103 supermarkets and 783 restaurants (EHD, 2012). Malta's GDP per capita in 2013 was € 13,800 and the percentage GDP spent on health is 9.1%.

Annex 2

Detailed Epidemiological Situation

2.1. Prevalence of Overweight and Obesity

2.1.1. Children

In a large national cohort study, 3435 children in the second year of formal education (7 years old) had their BMI measured and their BMI was measured again when they were in the 4th and 6th year of formal education (9 and 11 years old respectively). In 2008 amongst 7 year olds, 34.5% were classified as overweight or obese (Table A1). The proportions of overweight and obese are equal at 17%. By 2010, the same cohort who were then aged 9 years had a 12% increase in the proportion of overweight and obese children. The proportion of obese 9 year olds had increased by 9.1% while the proportion of overweight 9 year olds had increased by 11.6% (WHO, 2012). As can be seen in table A1, there were further increases age 11 years.

Children born in 2001						
	Age 7 Years (2008)		Age 9 years (2010)		Age 11 years (2012)	
	Boys	Girls	Boys	Girls	Boys	Girls
% overweight	8.8	16.1	17.6	16.6	22.4	23.7
% obese	17.3	13.5	26.4	23	27.8	20
% o/w + obese	26.1	29.6	44.4	39.6	50.2	43.7

Table A1: Measured BMI trends in cohort as measured in 2008, 2010 and 2012

In the Health Behaviour School-aged Children (HBSC) Study, where the body mass index (BMI) is self-reported, it was evident that the BMI amongst school children in Malta is one of the highest in the world. In fact Malta ranks second to the USA for overweight and obese children aged 11 and 13 while it ranks first in children aged 15. In light of the previous study on younger children which measured BMI, one notes that the measured proportions are larger than the self-reported proportions giving an indication that the results from the survey are likely an underestimate (HBSC, 2010).

Males tend to be more overweight or obese when compared to females though the difference is not significant. On average 30% of Maltese children aged 11, 13 and 15 years of age are overweight or obese and the proportions in all age groups and genders is well above the HBSC average (Table A2).

In 2010, the Health Behaviour in School Children (HBSC) data for overweight and obesity among 11 – 15 year old Maltese children showed various results. This is because the rate increased in 11 year old boys and girls and 13 year old boys. However compared to 2006, obesity and overweight rates in 13 year old girls and 15 year old boys and girls decreased by 2%, 4% and 5% respectively. Although this decrease might be the start of obesity reduction in Malta due to adolescents' increased health awareness, the percentages are still higher than those recorded in 2002 (HBSC, 2010).

		Malta 2006	Malta 2010	HBSC (2006) Average	HBSC (2010) Average
11 year olds	Male	30%	41%	16%	17%
	Female	25%	26%	12%	13%
13 year olds	Male	31%	37%	16%	17%
	Female	31%	29%	10%	11%
15 year olds	Male	32%	28%	17%	18%
	Female	28%	23%	10%	10%

Table A2: Self-reported BMI in children aged 11, 13 and 15, (HBSC, 2006 and 2010)

2.1.2. Adults

According to the European Health Interview Survey (DHIR, 2008) that covered the population aged 15+, approximately 22% of the Maltese population is obese (BMI >30 kg/m²) and a further 36% are overweight (BMI > 25 kg/m²).

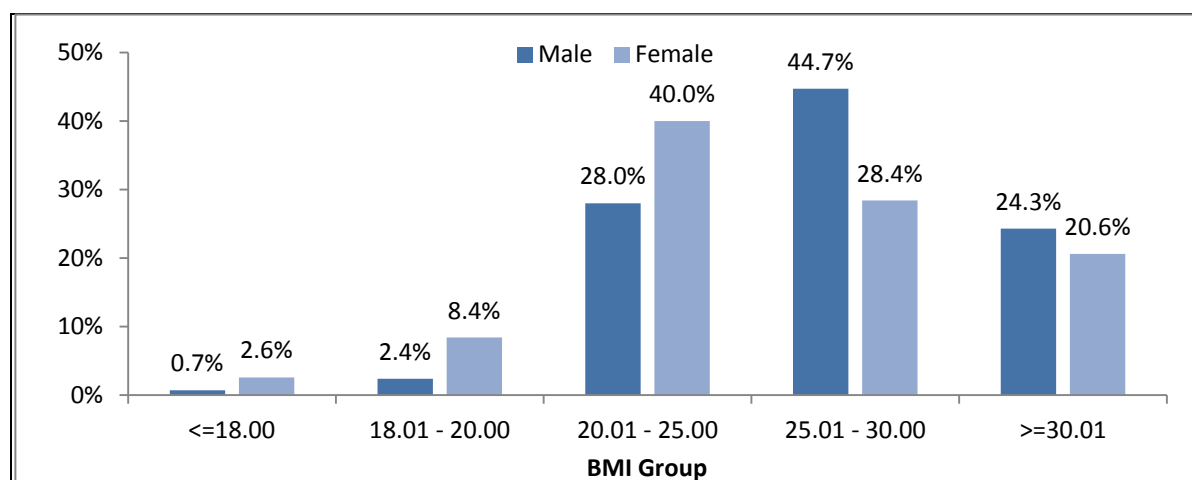


Figure A1: Self-reported BMI in population aged 15+, 2008

According to the European Health Examination Survey 2010 (pilot study) (DHIR, 2012) the percentage of the population aged 19 and over that is obese is 29.8 % and 47.2 % that are overweight.

When compared to EU member states, Malta has the highest rate of obesity amongst males and the third highest rate amongst females. Amongst both males and females below normal BMI is commonest in the youngest age group of 15 to 24. In males the highest proportion of obese and overweight individuals is in the 55 to 64 age group. In females an overweight BMI is highest in the 45 to 54 age group while the highest proportion of obesity is in the 65 to 74 age group.

BMI projections, disease incidence, prevalence projections and cases avoided for Malta were studied by the World Health Organization. These projections indicate that more males tend to be overweight over the age of 25. Obesity is predicted to increase in the younger age groups by 2030, but to fall in other age groups. As more obese individuals reduce in weight, the overweight category is expected to increase greatly.

According to the modelling used in the study report, there would be a substantial increase in cumulative incidence cases of non communicable diseases avoided between 2010 and 2030 per 100 000 of the Maltese population in the case of a 1% (scenario 1) or a 5% (scenario 2) decrease in obesity. A similar positive decrease in prevalence cases avoided per 100 000 of the Maltese population is projected in 2030 by a 1% (Figure A2) and by a 5% reduction in obesity rate (Figure A3).

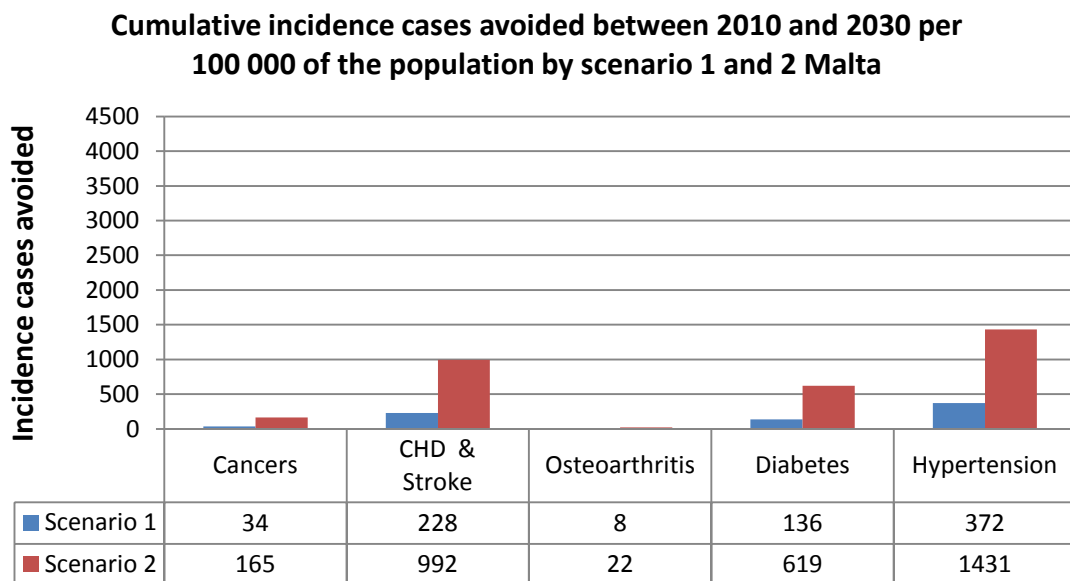


Figure A2 Effect of obesity reduction by 1% (scenario 1) and by 5% (scenario 2) on cumulative incidence cases avoided (World Health Organisation, unpublished, 2012)

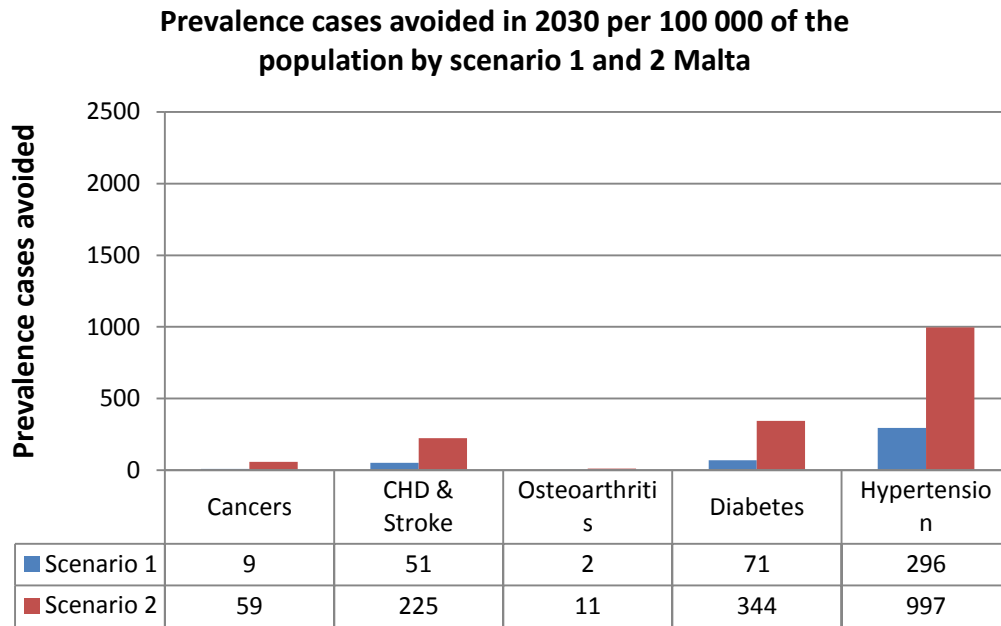


Figure A3 Effect of obesity reduction by 1% (scenario 1) and by 5% (scenario 2) on prevalence cases avoided (World Health Organisation, unpublished, 2012)

2. 2. Dietary habits of the Maltese population

2.2.1. Schoolchildren (11-15 years)

Breakfast

Daily consumption of breakfast on school days in Malta was low compared to the Health Behaviour in School Children (HBSC) average. In fact in both genders and across all age groups, the proportion of students eating breakfast daily was lower than the HBSC average. Males have breakfast daily more than females and the difference between genders became wider with increasing age. Like in most of the countries in the study, daily breakfast consumption decreased with age. Amongst Maltese children approximately 52% ate breakfast daily during school days that led to the ranking of third lowest amongst 41 countries (HBSC, 2006). By the age of 15 years this went further down to approximately 42% (HBSC, 2006). In the 2010 HBSC study (Table 3), although the percentages of Maltese children consuming breakfast are better than the 2006 HBSC (except for 13 year old females), however they are still low compared to the HBSC International 2010 average.

		Malta 2006	HBSC 2006 Average	Malta 2010	HBSC International 2010 Average
11 year olds	<i>Male</i>	53%	70%	56%	72%
	<i>Female</i>	52%	68%	60%	69%
13 year olds	<i>Male</i>	49%	65%	45.4%	65%
	<i>Female</i>	41%	54%	38%	57%
15 year olds	<i>Male</i>	46%	60%	50%	59%
	<i>Female</i>	38%	50%	47%	50%

Table A3: Breakfast habits in children aged 11, 13 and 15, (HBSC, 2006 and 2010)

Fruit and Vegetables

The number of children consuming fruit on a daily basis decreased with increasing age. Approximately 44% of 11 year olds said they consumed fruit daily, this percentage decreased to approximately 35% in the 15 year olds (HBSC, 2006). Fruit consumption was generally greater in females with a significant difference in the 13 year old age group with 14% more females consuming fruit daily. In all age groups the proportions of Maltese children consuming fruit daily was above the average of the countries in the HBSC survey.

For 2010, amongst girls, daily fruit consumption remains relatively constant throughout the three age groups at approximately 42%. Amongst boys there is a sharp decline in the 15 year old age group with only 25% consuming fruit daily when compared to 40% in the younger categories (HBSC, 2010). When compared to the HBSC average for 2010, Maltese girls aged 13 and 15 consume fruit more often while boys aged 11 and 13 are also above the average. The trends observed for the data from Malta is similar to the trend in the HBSC average where we see a decline with age and a difference between genders with girls consuming fruit more than boys. Since 2002 there has been a constant drop in the proportion consuming fruit daily among 11 year olds, 13 year old girls and 15 year old boys. There was an increase in consumption in girls aged 15 since 2006 and an increase in 13 year olds boy since 2006.

		Malta 2006	HBSC 2006 Average	Malta 2010	HBSC International 2010 Average
11 year olds	<i>Male</i>	42%	37%	40.9%	38.0%
	<i>Female</i>	46%	45%	42.4%	46.0%
13 year olds*	<i>Male</i>	33%	31%	40.4%	33.0%
	<i>Female</i>	47%	39%	43.2%	40.0%
15 year olds	<i>Male</i>	35%	25%	25.3%	27.0%
	<i>Female</i>	34%	34%	41.0%	35.0%

Table A4: Fruit consumption in children aged 11, 13 and 15, (HBSC, 2006 and 2010)

Girls seem to consume vegetables on a daily basis more often than boys across all ages. Around 21% of the girls and 16% of the boys consume vegetables on a daily basis. This difference seems to increase as age increases. As age increases, girls tend to consume vegetables on a daily basis more. However there is a slight decrease as age increases in boys. Across all ages, Malta is below the HSBC 2010 average. This difference decreases as age decreases. The pattern observed in the HBSC 2010 average is similar to that of Malta, whereby the consumption of vegetables on a daily basis is higher in girls than in boys. Moreover as age increases, the percentage of boys consuming vegetables on a daily basis decreases, which is similar to the pattern observed in Malta. Contrary to Malta, the percentage of girls consuming vegetables on a daily basis decreases as age increases.

Since 2002, the percentage of girls consuming vegetables on a daily basis was higher than that of boys. However, the percentage of 11-year olds consuming vegetables on a daily basis decreased since 2002, whilst the percentage of 13 and 15 year-olds consuming vegetables increased. (Table A5) (HBSC, 2010)

		Malta 2002	Malta 2006	Malta 2010	HBSC Average (2010)
11 year olds	<i>Male</i>	19%	12%	16%	32%
	<i>Female</i>	25%	19%	18%	40%
13 year olds	<i>Male</i>	10%	7%	16%	29%
	<i>Female</i>	15%	14%	21%	35%
15 year olds	<i>Male</i>	12%	8%	15%	26%
	<i>Female</i>	15%	14%	23%	35%

Table A5: Vegetable consumption in children aged 11, 13 and 15 from 2002-2010 (HBSC, 2002, 2006, 2010)

Soft Drinks

For all HBSC studies, the daily consumption of soft drinks amongst Maltese school aged children was high when compared to the other HBSC countries (Table 6). In fact in all age groups and both genders, the proportion of Maltese children consuming soft drinks on a daily basis was well above the HBSC average. Compared to the HBSC studies for 2002 and 2006, the 2010 HBSC data shows that the daily consumption of soft drinks amongst Maltese school aged children is on the increase. By the age of 15, 49% of males and 34 % of females are consuming soft drinks on a daily basis.

Percentage consuming soft drinks daily						
	Age					
	11		13		15	
	Boy	Girl	Boy	Girl	Boy	Girl
2002	36.5%	38.8%	45.7%	39.2%	45.0%	35.9%
2006	44.0%	34.0%	47.0%	37.0%	49.0%	35.0%
2010	44.3%	44.3%	46.9%	43.8%	49.3%	34.3%
HBSC international average 2010	19.0%	16.0%	25.0%	20.0%	28.0%	22.0%

Table A6: Percentage of 11, 13 and 15 year old Maltese Schoolchildren who consume soft drinks daily as per HBSC survey years 2002, 2006 and 2010

2.2.2. Adults

The following information on dietary habits amongst the Maltese population 16 and over has been generated from two surveys i.e. the 2002 National Health Interview Survey and the 2008 European Health Interview Survey. The former (survey) contained questions on dietary habits on starchy food, fish, saturated fat, sugar and sugary drinks, and salt. The latter (survey) provided data on fruit and vegetable consumption.

Starchy Food (2002)

The consumption of starchy foods on 3 or more days a week was generally low. Approximately 28% consumed cereals 3 or more days a week, 30% consumed rice or pasta, 10% consumed fried potatoes and 32% consumed other potato products. Maltese bread remained the most common type of bread consumed with an average of 2 slices per day while brown bread is the bread least consumed by the population.

Fish (2002)

There was a similar pattern of fish consumption amongst males and females. Fish was most commonly eaten 1 to 2 days per week at 51.8% of respondents following this habit. One must note that a further 41.7% did not consume fish. A trend of increasing consumption of fish was noted with increasing age. Education did not appear to play a significant role in the consumption of fish in the population.

Protein and Fat Intake (2002)

Chicken and rabbit consumption was similar in both genders with the most 71.8% of the population eating this produce 1 to 2 days a week. There were no differences in consumption by age and education. Meat was similarly consumed most commonly 1 to 2 days a week with 62% of the population following this dietary habit. Unlike with rabbit and chicken; there was a difference in frequency in the consumption of meat and meat products by education. An inverse association was noted for meat and meat products and the mean number of years of education.

The consumption of low fat cheese amongst the population was low with the majority of respondents (39.7%) saying they never consumed low fat cheese. Similarly the largest proportion of respondents (35%) said they never ate cheese. Amongst those who ate cheese or low fat cheese, it was most commonly consumed 1 to 2 days a week. Education did not appear to play a major role in the consumption of both cheese and low fat cheese in the population.

Contrasting habits were noted in the use of oils/fats for cooking and those used on bread. Other vegetable oils were the most common oils used for food preparation at 53%; on the other hand olive oil was the most commonly used oil/fat on bread at 38.7%. The use of olive oil and other vegetable oils in both food preparation and as a spread on bread varies by age with the use of olive oil reducing as age increases and the use of other vegetable oils increasing as age increases.

Sugar (2002)

The majority of the participants said they never consumed sweets (38%) while a further 26% said they consumed sweets on one to two days a week. Further to this 33.4% of the population said they consumed sweet pastries one to two days a week while another 31% said they never consumed sweet pastries. Overall there were no significant differences in the consumption of sweets and sweet pastries by gender. However, the highest daily consumption was found to be in the younger age groups (15 to 24) followed by those aged between 25 and 44; after which daily consumption reduced. It was also interesting to note that daily consumption increased following this down-going trend in those aged 75+.

The consumption of sugared soft drinks ranged from 57% saying they never consumed soft drinks and 21% saying they consumed soft drinks daily. However, the highest daily consumption was found to be in the younger proportion of the population and this was seen even more in males where 50% of males aged between 15 and 24 reported drinking sugared soft drinks on a daily basis compared to approximately 22% amongst females in the same age group. Similar to the pattern observed with sweets and sweet pastries, while consumption of sugared soft drinks decreased with age, it was noted to increase again in

those aged 75+. Education seems to play a significant role in the consumption of sugared drinks; in fact those who consumed sugared soft drinks daily had a significantly lower number of years of completed education.

Salt (2002)

Forty-seven percent of the population said that they ‘almost always add salt’ (excluding food enhancers including those containing monosodium glutamate) to their meals while cooking. This was followed by 35% who said they ‘never add salt’ or ‘use low salt alternatives’. In contrast to this, 58% said that they ‘never add salt’ to their meals at the table or ‘use a salt alternative’ while 24% said they ‘always add salt’ at the table. Education was not significantly associated with habits related to salt usage.

Fruit and Vegetables (2008)

Seventy-four percent of respondents reported consuming fruits at least once a day while 51% of respondents reported consuming vegetables at least once a day (Figure A4). Daily fruit and vegetable consumption was highest amongst females and increased with age. Amongst those aged 45 years and over approximately 80% reported consuming fruit daily while approximately 56% report consuming vegetables daily.

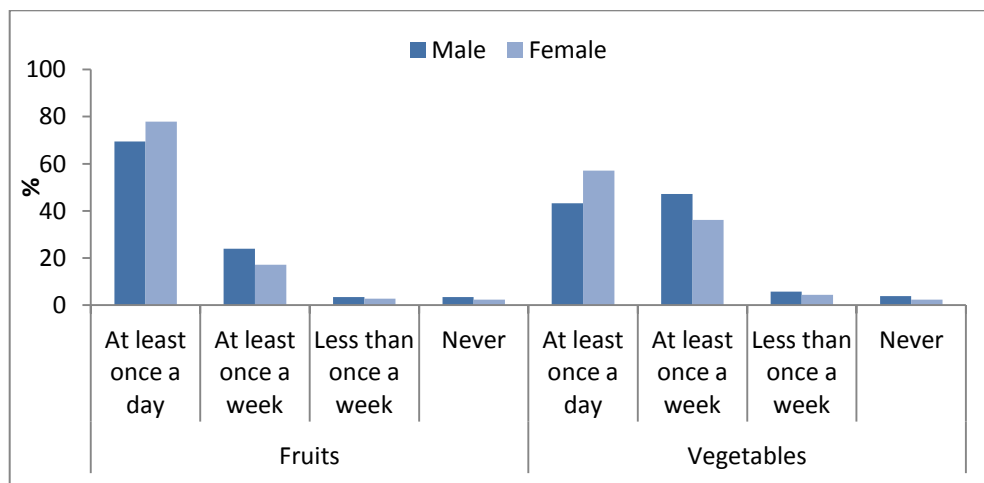


Figure A4: Fruit and vegetable consumption by gender population aged 15+, (HIS 2008)

2.2.3. The Malta Standards Authority Food Consumption Survey 2010

The first food consumption survey carried out by the Malta Standards Authority (2010) showed that the Maltese still have poor eating habits that can be further enhanced for better health attainment. It determined that Maltese people still consume high amounts of sweets and sugary foods and that consumption of vegetables was low.

A common limitation to all of the above-mentioned food consumption survey reports is the lack of adequate information on the quantity of food (grams) and drink (litres) consumed by the targeted population. Hence, the dire need for Malta to set up a methodologically

sound scientific food consumption survey to be carried out periodically so as to monitor nutrition trends and evaluate interventions in the area of nutrition.

2.3. Diet-related noncommunicable diseases

Noncommunicable diseases account for nearly 86% of deaths and 77% of the disease burden in the WHO European Region, putting increasing strain on health systems, economic development and the wellbeing of large parts of the population (Action Plan for Implementation of the European Strategy for the Prevention and Control of Noncommunicable Diseases 2012 – 2016, WHO, 2012). The following will give an outline of the epidemiological data for diabetes, hypertension, hypercholesterolaemia, cardiovascular disease and colorectal cancer in the Maltese population.

2.3.1. Hypertension

According to self-reported data on hypertension from European Health Interview Survey 2008 (EHIS, 2008), the self-reported life time prevalence of hypertension in the population is 22%. Females have a slightly higher prevalence than males, though it is not a significant difference. In both genders, as age increases the prevalence increases. Middle age sees the prevalence increase most rapidly with an increase of approximately 13% from the age of 35 – 44 to the age of 45 – 54. By the age of 75+ nearly half of the population reports having hypertension.

	Male	Female
	<i>% in age group</i>	<i>% in age group</i>
15 – 24	2.6%	1.1%
25 – 34	7.1%	2.7%
35 – 44	10.8%	7.8%
45 – 54	25.9%	20.3%
55 – 64	36.3%	43.0%
65 – 74	38.9%	54.5%
75+	46.2%	50.0%
Total	22.1%	23.3%

Table A7: Self-reported lifetime prevalence of Hypertension by gender in population aged 15+, EHIS, 2008

According to the EHES (2010), the number of participants with normal blood pressure was 67.9 %; that with stage 1 hypertension (Systolic ≥ 140 -159 mmHg or Diastolic ≥ 90 -99 mmHg) was 23.5% whereas those with stage 2 hypertension (Systolic ≤ 160 mmHg or Diastolic ≤ 100 mmHg) was 8.5% (MHEC, 2012).

2.3.2. Diabetes

According to the European Health Interview Survey (2008) and the International Diabetes Federation (IDF) Diabetes Atlas (2010), the self-reported life time prevalence of diabetes among the Maltese population is 8%. Males have a slightly higher prevalence than females, though it is not a significant difference. In both genders, as age increases the prevalence increases. Middle age sees the prevalence increase most rapidly with more than doubling of the prevalence from the age group of 45 to 54 to 55 to 64.

As per the European Health Examination Survey 2010 – pilot study, which involved the measurement of blood glucose levels among participants, the prevalence of diabetes amongst the population aged 20 to 79 was 10.1%. The prevalence for the whole study population aged 18 years and over was 9.8%. The prevalence of elevated blood glucose was higher in women (10.7%) than men (9%) (MHEC, 2012).

	Ma	Female
	<i>% in age group</i>	<i>% in age group</i>
15 – 24	1.1%	0.3%
25 – 34	0.8%	1.6%
35 – 44	1.3%	1.8%
45 – 54	7.6%	10.3%
55 – 64	16.2%	10.3%
65 – 74	22.5%	21.3%
75+	23.9%	19.9%
Total	8.9%	7.2%

Table 8: Self-reported life time prevalence of diabetes by gender in population aged 15+, EHIS, 2008

The International Diabetes Federation estimates that the prevalence of diabetes amongst those aged 20 to 79 is 9.8%, ranking Malta 8th highest amongst the 27 EU member states.

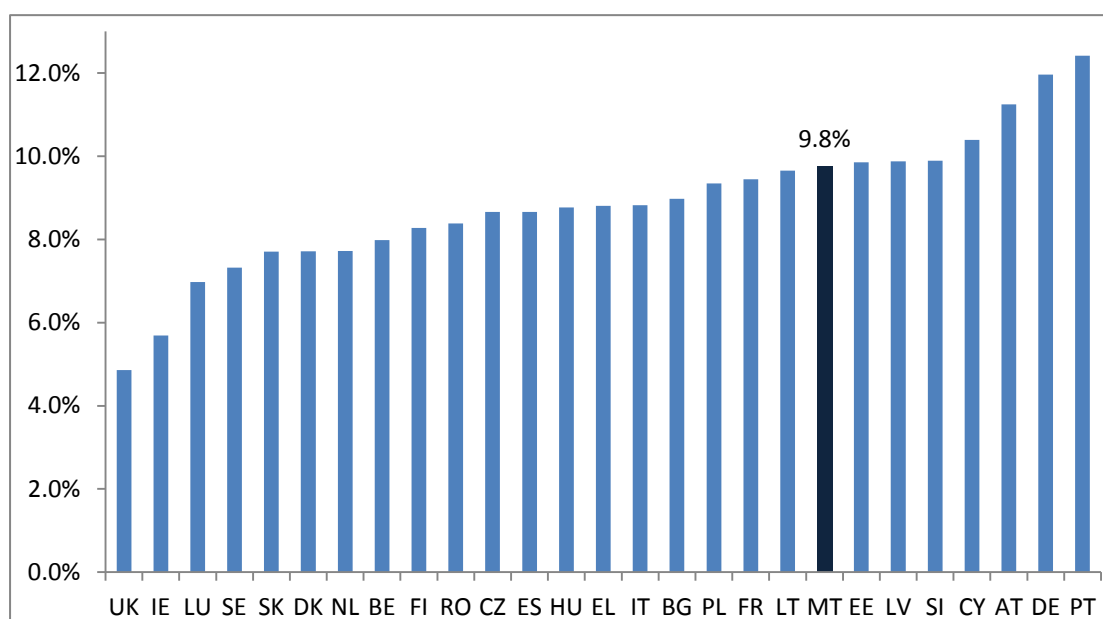


Figure A5: Estimated prevalence in diabetes in 2010, International Diabetes Federation

2.3.3. Hypercholesterolaemia

According to self-reported data on hypercholesterolemia from National Health Interview Survey 2002, the self-reported life time prevalence of hypercholesterolemia in the population is 8.9%.

	Male	Female
	% within age group	% within age group
15 – 24	1.2%	0.0%
25 – 34	3.0%	0.6%
35 – 44	8.1%	2.2%
45 – 54	11.7%	11.5%
55 – 64	17.1%	22.3%
65 – 74	18.2%	17.3%
75+	7.5%	12.7%
Total	9.1%	8.7%

Table A9 Self-reported lifetime prevalence of hypercholesterolemia by gender in population 15+, 2002

According to the EHES (2010), the number of participants with a low risk total serum cholesterol level ($\leq 5.00\text{mmol/l}$) was 37.3%; those with a higher risk total serum cholesterol level ($>5.00 - 6.18 \text{ mmol/l}$) was 40.2% whereas those with a high risk total serum cholesterol level ($>6.18 \text{ mmol/l}$) was 22.5% (MHEC, 2012).

2.3.4. Colorectal Cancer

The incidence of colorectal cancer in Malta is similar to that in other European countries. In 2012 the European age standardised incidence rate for colorectal cancer amongst males was approximately 60 new cases per 100,000 population while for females it was 38 new cases per 100,000 population (EUCAN, 2012).

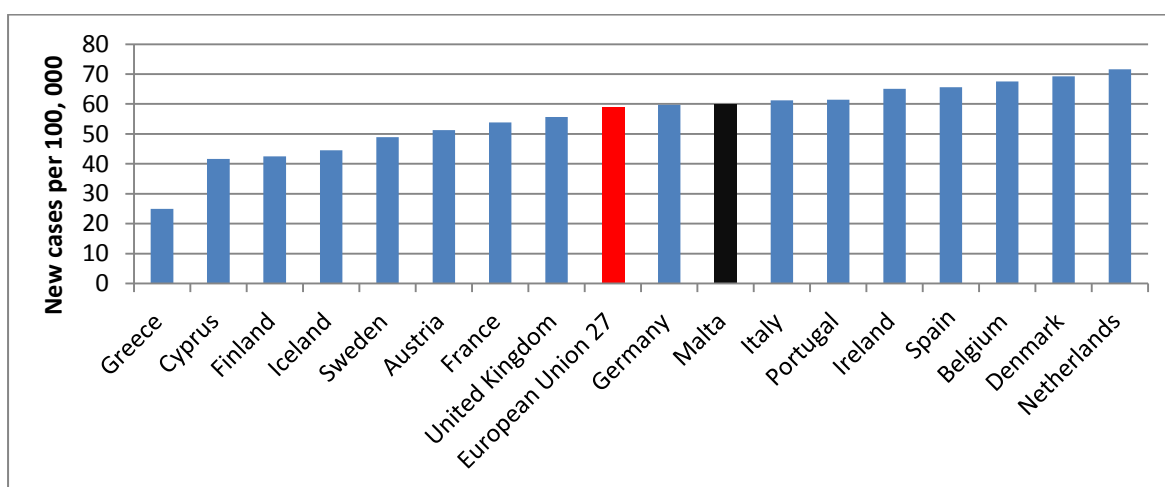


Figure A6: European age standardised incidence rate of colorectal cancer Males 2012; European Cancer Observatory

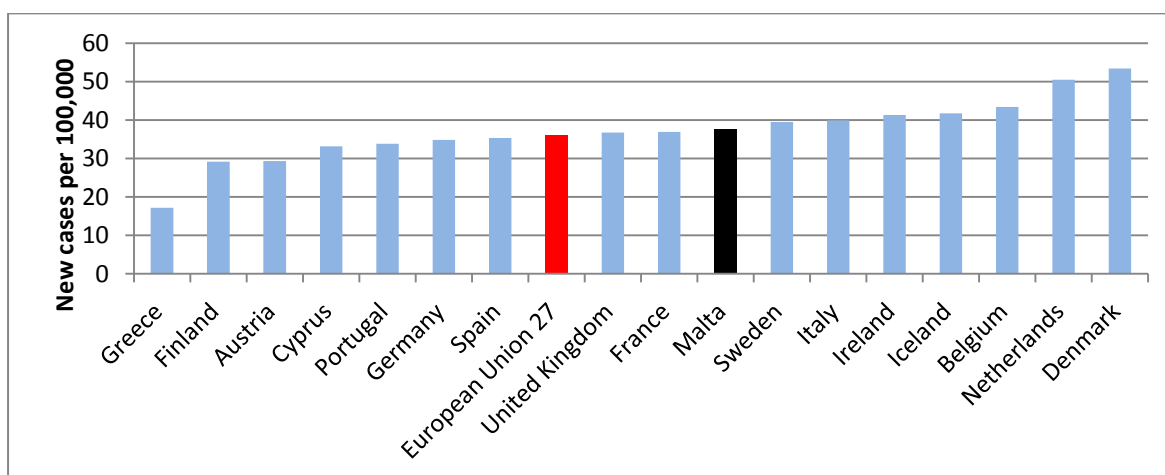


Figure A7. European age standardised incidence rate of colorectal cancer Females, 2012 European Cancer Observatory

2.3.5. Stomach Cancer

In Malta the European age standardised incidence rate for stomach cancer amongst males was approximately 14 cases per 100,000 population while for females it was approximately 5 cases per 100,000 population (DHIR, 2012).

2.3.6. Liver Cancer

In Malta the age standardised incidence rate for liver cancer amongst males was approximately 9 cases per 100,000 population while for females it was approximately 3 cases per 100,000 population (DHIR, 2012).

2.4. Mortality data for Noncommunicable diseases

In Malta, diseases of the circulatory system, namely ischaemic heart disease, stroke and heart failure are the leading causes of death accounting for 46.7% of all deaths. Despite a downward trend in mortality rates from ischaemic heart disease, rates are higher than the average for the EU-15.

2.4.1. Ischaemic Heart Disease (I20 – I25)

The age standardised mortality rate for Malta is well above the EU average. In 2012 there were approximately 143 deaths per 100,000 due to ischaemic heart disease in Malta with a male to female ratio of 1.7.

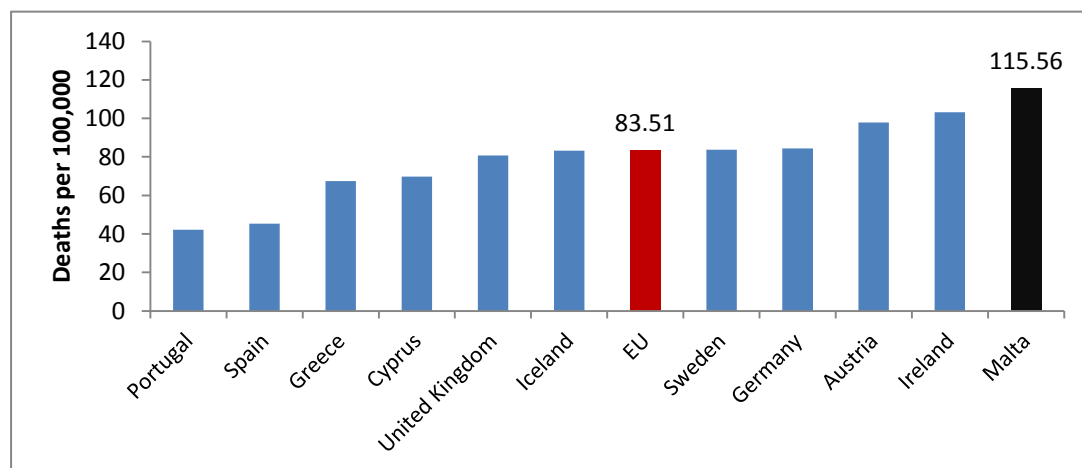


Figure A8: Age standardised mortality rate for ischaemic heart disease in 2009, WHO Health for All Database

2.4.2. Cerebrovascular Disease (I60 – I69)

Similarly to ischaemic heart disease mortality, the age standardised death rate for cerebrovascular disease in Malta is above the EU-15 average, though the difference is not as wide as for ischaemic heart disease. In 2012 there were approximately 41 deaths due to cerebrovascular disease per 100,000 accounting for 8.1% of all deaths.

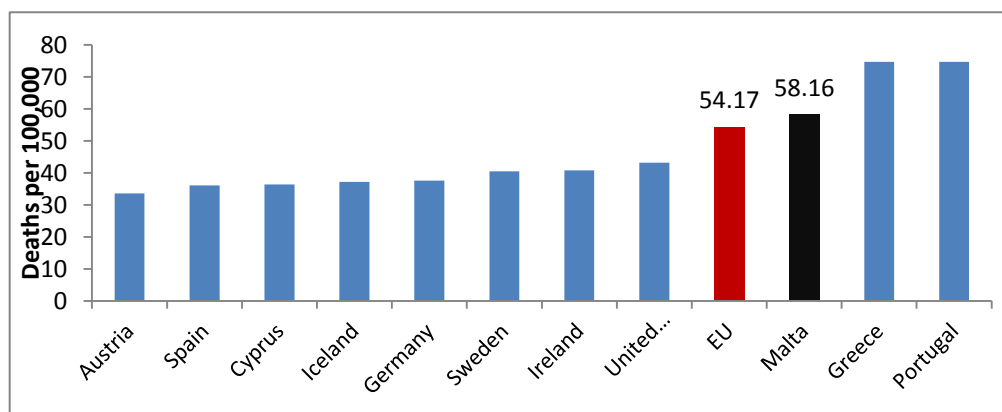


Figure A9: Age standardised mortality rate for cerebrovascular disease in 2009, WHO Health for All Database

2.4.3. Colorectal Cancer

Mortality rates for Malta do not follow a similar pattern as those of incidence rates for colorectal cancer. While in males the mortality rate is similar to the EU-27 average in females the mortality rate is slightly higher than the EU-27 average. Amongst males in 2012 there were approximately 23 deaths per 100,000 population due to colorectal cancer compared to 24 deaths per 100,000 in Europe. On the other hand in females in 2012 there were approximately 16 deaths due to colorectal cancer per 100,000 population in Malta compared to 14 deaths per 100,000 in Europe.

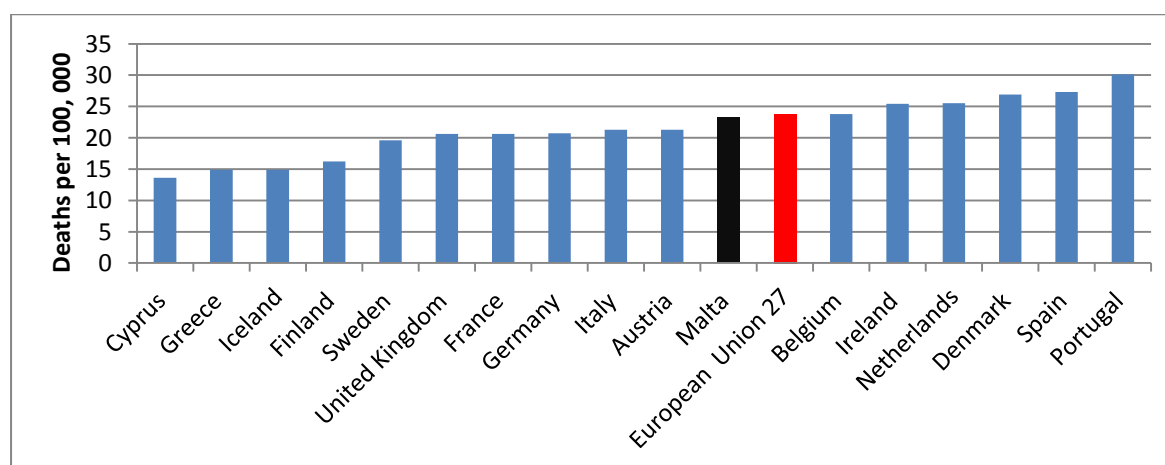


Figure A10: European age standardised death rate for colorectal cancer Males 2012, European Cancer Observatory

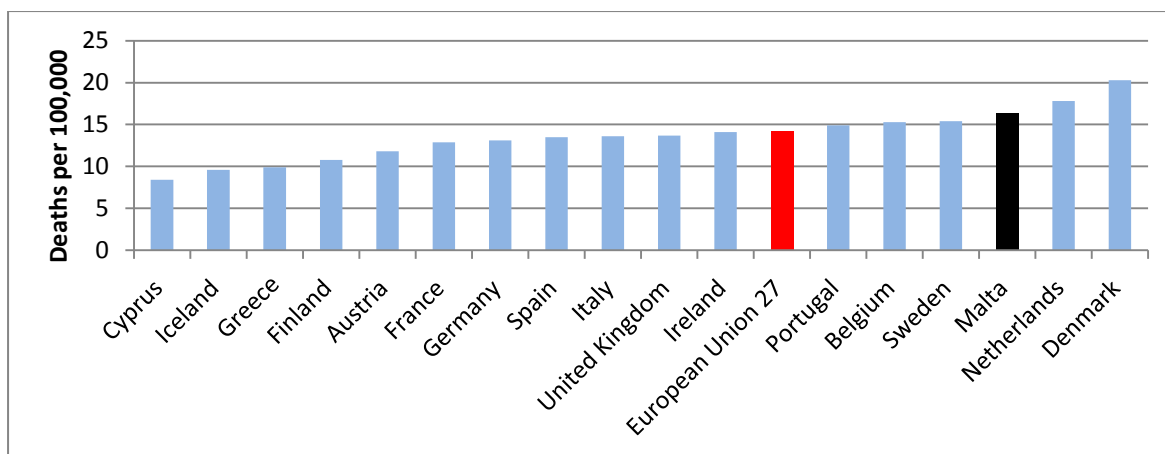


Figure A11: European age standardised death rate for colorectal cancer Females 2012, European Cancer Observatory

2.4.4. Stomach Cancer

The European age standardised death rate for diseases of the stomach was 5.4 per 100,000 population. In 2010, there were 31 deaths of which 22 were males and 9 were females due to malignant neoplasm of the stomach.

2.4.5. Liver Cancer

The age standardised death rate for diseases of the liver was 6.6 per 100,000 population. In 2012, there were 40 deaths of which 28 were males and 12 were females. Of these, 12 males and 2 female deaths were attributed to alcoholic liver disease. This amounts to 7 deaths per 100,00 population.

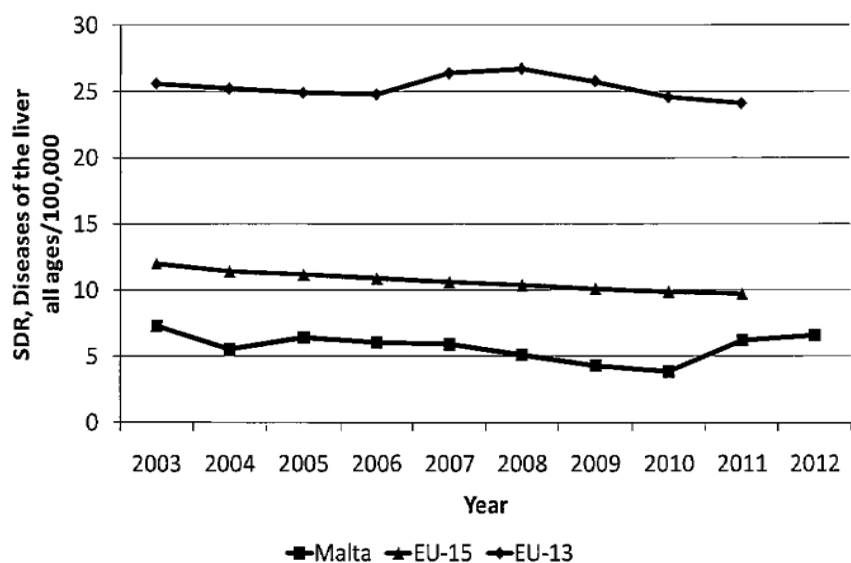


Figure A12: Standardised death rate for chronic liver disease and cirrhosis per 100,000 population in Malta compared to EU-15 and EU-12 all ages as per WHO/Europe-Health for All Database (DHIR, Annual Report, 2012)

Mortality due to chronic liver disease is low for males and even lower for females in Malta when compared with EU-15 and EU-13 (Figure A12).

2.5. *Micronutrient Deficiencies*

As opposed to obesity, back in the late 1980's micronutrient deficiencies were not considered to be a major public health challenge in the Food and Nutrition Policy for Malta (Department of Health, 1990); and thus far, no studies at national level have been carried out to determine to what extent micronutrient deficiencies exist among the Maltese population.

Annex 3

Current Initiatives for Food and Nutrition in Malta

	Initiative	Settings	Target Group	Lead sector and other sectors	Year	Remarks
1	BMI assessment based on US CDCP	Secondary Schools	Secondary school Children	MEEF	2008	
2	ECOSI based on WHO BMI classification	Primary schools	Primary school Children	School Health Services MEEF	2007-ongoing	Now in its third study
3	EU School Fruit Scheme	All kindergarten and primary Schools /	All kindergarten and primary school children	MRRA-Paying Agency; MEEF and HPDP	2009-ongoing	School Fruit Scheme External Evaluation Report, MRRA 2012)
4	EU School Milk Scheme	Primary and Secondary Schools	Primary and Secondary Schoolchildren aged 3-16 yrs	MRRA-Paying Agency MEEF	2007/8 - ongoing	Only a few secondary schools participate in this scheme.
4	European Food Framework	Four Schools	Students, parents and teachers attending these four schools	University of Malta; MEEF	2011-ongoing	Pilot project
5	Weight Management Programme	Community	Overweight and obese adults aged 18+ yrs	HPDP; PHC	1995-ongoing	Free service/carried out in groups. Extended to workplaces in 2011
6	Parent-craft classes	State Hospital	Mothers-to-be	Maternity Services, MDH;	19 - ongoing	In 2011, introduction of a new childcare session for grandparents. It includes breastfeeding and weaning.
7	Breastfeeding Walk-in Clinic	State Hospital	Mothers who opt to breastfeed	Maternity Services, MDH	2004	Offers advice and support for Breastfeeding mothers.
8	EU Initiative to reduce salt intake	Community	Maltese Population	MFH	2008-ongoing	Salt awareness campaigns; introduction of salt-free bread; salt surveys
9	EU Aid to the Deprived Scheme	Community	Persons meeting eligible criteria set by the Social Security Office	MRRA – Paying Agency	2005-ongoing	

10	Information and promotion campaigns on seasonal local vegetables, fruit and fish produce	Community	Maltese families/ general public	MRRA- RDAD; Local Councils, HPDP private sector	2008 (on TV) – ongoing (in different villages)	Healthy affordable dishes made from local seasonal produce; free brochures with nutritional information and healthy recipes
11	Farmers' Market	Community	General public living in the north of Malta.	MRRA	2010 - ongoing	Proposal for another set up in the Southern areas.
12	National Awareness-raising campaigns on healthy eating and physical activity	Community	Maltese Nation	HPDP- MFH	1990-ongoing	<p>Mediterranean diet; Cancer prevention; 5-A-Day; annual Breastfeeding weeks; annual 'Move for Health Day'; '<i>Haxix u frott – 5 trid tghodd?!'</i>'; Salt Awareness Week; Reading of Food Labels for healthier choices.</p> <p>Campaigns included health educational written material; involvement of nutritionists in the media, community; workplaces and a helpline.</p> <p>Nutritionists from HPDP have over the years carried out training seminars on healthy eating upon request to different entities upon request e.g. church school teachers; workplaces;</p>
13	National Awareness-raising campaigns targeting obesity	Community/	Maltese Nation	HPDP- MFH	2007 - 2008	<i>Hfief u b'sahhitna tul Hajjitna!</i> - themes: to increase PA in childhood; encourage regular checks of BMI among the public and persons with BMI >30kg/m ² to enrol in the national weight management programme.

					2009	Advertising on various electronic media A year-long pilot project within one local council to address excess weight
					2010	Healthy Weight for Life – themes: to achieve energy balance through eating in moderation, to make healthy food choices and to achieve adequate levels of physical activity. A 13-series TV programme ‘ <i>Hekk Ahjar!</i> ’ that included cookery, aerobic exercise and information on healthy lifestyle choices
					2011	<ul style="list-style-type: none"> ▪ ‘Stop YO-YO’; information on the dangerous cycle of repeated loss and regain of body weight and its effect on mental and physical health <p>Guidelines issued to all GPs and pharmacies on the prevention and management of co-morbidities;</p>
					2012	‘Cook Healthy –Stay healthy’ - a competition to promote healthy recipes/cooking among the general public; new healthy recipe cards (available online); and related outreaches.
					2013	Food portions campaign to encourage the public to reduce food portions
16	Educational campaigns and schemes related to Waste Management	Community, schools, media/ the general public and schoolchildren		MEPA WasteServ Malta Ltd.		MEPA publishes regularly articles on newspapers, participates on media programmes and uses other media forms; authorises

						<p>schemes such as packaging waste recovery schemes;</p> <p>WasteServ Malta Ltd. has carried a number of campaigns over several years related to the separation collection of waste and waste management.</p>
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