LUISS

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of Political Science

Course of Healthcare policies in Europe

A European crusade against non-communicable diseases: fighting inequalities

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So Daniel said to the guard whom the chief eunuch
had assigned to Daniel, Hananiah, Mishael, and Azariah,
"Please test your servants for ten days.
Let us be given vegetables to eat and water to drink.
Then examine our appearance and the appearance of the young men
who are eating the king's food,
and deal with your servants based on what you see.".

- *Daniel 1:11-13 (CSB)*

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Introduction

In the present day, non-communicable diseases (NCDs) are the world's leading cause of death, killing 35 million people each year[1]. Furthermore, according to the World Health Organisation (WHO), this number is projected to increase by an additional 17% over the course of the next ten years[2]. The same organisation reports that Europe is the world area most severely plagued by non-communicable diseases[3]. While NCDs will be more properly defined later in the present paper, for now we will anticipate that 77% of these diseases is made up by diabetes, cardiovascular diseases, cancer and respiratory diseases, all together accounting for 86% of premature deaths in the continent[4]. The World Health Organisation also reveals that, among the leading causes of the aforementioned illnesses, there is the current "Western" high-calorie diet rich in saturated fats, sugar and salt[5]. This is why several European countries have been implementing various policies with the scope of improving their national diets and thus preventing the onset of non-communicable diseases. However, designing health policies is not a simple task, since three different matters must be taken into account throughout the entire process:

1. the actual cost-effectiveness of said policies,
2. their compliance with European Union (EU) law and, as we would like to add,
3. the impact of rising socio-economic inequalities on dietary choices.

We will also analyse some of the unfortunately common instances where health policies (in particular, "fat taxes") designed to help the general population to implement positive dietary changes result in the opposite outcome. The aim of this work is to discern which types of aid, in the form of public policies, have proved to be truly beneficial to whom they are supposed to aid. To do so, this paper will firstly analyse non-communicable diseases: their main determinants, their prevalence and a number of scientifically proven dietary changes to reduce their occurrence. Although the onset of NCDs does not simply depend on the quantity and quality of our daily nourishment (as we will explain in Chapter I), we have chosen to focus our attention on diet, since it would be impossible to properly dissect the entirety of non-

[1] Susanne Giesecke et al., "Drivers and Trends of Future Developments of Non-Communicable Diseases," *WP3 Horizon Scanning and Driver Identification*, March 31, 2016, https://www.foresight-fresher.eu/content/uploads/2018/03/d3-1-horizon-scanning-report-corrected.pdf.
[2] Ibid.
[3] WHO Regional Office for Europe, *Using Price Policies to Promote Healthier Diets*, 2015.
[4] Ibid.
[5] Ibid.

communicable diseases' determinants in a paper of this sort. Medical sources on NCDs and the role played by diet in their onset will be carefully reviewed. Secondly, we will inquire on the most effective national public policies to reduce their incidence – with a focus on a certain type of policies affecting dietary choices, the so called "fat taxes" – and their conformity to the Treaty on the Functioning of European Union. In fact, certain forms of indirect internal taxes implemented by EU States, of which "fat taxes" (to be analysed more in depth later) are an example, may create a higher tax burden on imported products coming from other Member States, thus hindering their compliance with European Union law. Chapter II is going to investigate on whether this could actually be the case in some instances since "fat taxes" are not harmonised at the EU level and their modalities can therefore be different in each country. Existing literature on the topic and EU case law will be reviewed, alongside with the various (past and present) national laws on the matter. Thirdly, Chapter III will explore different future scenarios in terms of general health achievable through public policies in the European region and the European Union, with special attention directed towards tackling inequalities while lowering the number of casualties that occur yearly due to non-communicable diseases (i.e., we will find out about the types of aid that do not damage the weakest members of society). We might in fact be able to easily obtain significant improvements in our prevention of NCDs in the foreseeable future while at the same time deepening the already existing socio-economic inequalities, by creating a society in which the health care system has been privatised and only affluent citizens can afford to be in their best health. This paper is going to advocate for a different approach, one where *helping does not hurt*, but instead actually benefits the majority of the population.

Chapter I
Europe on the verge of a health collapse

"Illness is the night side of life, a more onerous citizenship.
Everyone who is born holds dual citizenship,
in the kingdom of the well and in the kingdom of the sick.
Although we all prefer to use the good passport,
sooner or later each of us is obliged, at least for a spell,
to identify ourselves as citizens of that other place.".
- *Susan Sontag, Illness as metaphor*

Non-communicable diseases (NCDs) defined

Our analysis is going to begin by defining the object of study of the current chapter: non-communicable diseases (NCDs), described by the World Health Organisation as conditions that "tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioural factors"[6]. Since said conditions hinder human health, it would be also sensible to specify what we are referring to when we use the word "health". According to the Preamble to the Constitution of the World Health Organisation, health is "a state of complete physical, mental and social well-being and not merely the absence of infirmity or disease[7]". This paper is, however, going to mainly explore health as a condition of physical well-being, since non-communicable diseases have a great impact on the human body[8]. Before further discussing NCDs, other medical terms normally used to measure disease will be properly defined. "Prevalence" stands for the number of individuals that, in a certain moment, are affected by a specific disease, either through the entire world or in a smaller area (such as a single country)[9]. The term ought not to be confused with "incidence", that refers instead to the number of new cases of a certain disease[10]. Moreover, another instrument we will use to

[6] "Non Communicable Diseases", *Who.Int*, 2022, https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases.
[7] Constitution of the WHO as adopted by the International Health Conference of 19-22 June 1946 in New York City, signed on July 22, 1946 by the representatives of 61 States and entered into force on April 7, 1948.
[8] Not to say that they do not have an impact on mental health as well. However, the scope of this paper is not broad enough to also include mental health in our discourse.
[9] James A. Johnson, *Comparative Health Systems* ([S.l.]: Jones & Bartlett Learning, 2022).
[10] Ibid.

observe the severity of a disease is the mortality rate associated with it (technically named "disease-specific mortality") during a certain period of time[11].

Although non-communicable diseases are responsible each year for the premature death of circa 40 million people (equivalent to 71% of total human deaths on Earth), it is noteworthy to point out that 31.4 million (roughly three quarters) of said deaths occur in low- and middle-income[12] countries[13]. When we refer to non-communicable diseases, we are therefore envisaging a category of chronic diseases which include cardiovascular diseases (CVDs), cancers, diabetes, chronic respiratory diseases, obesity, musculoskeletal diseases and mental disorders[14]. "Cardiovascular diseases" is an umbrella term that includes a great deal of heart issues and/or blood vessel problems, but it most often refers to the damage that atherosclerosis causes to the heart and/or blood vessels[15]. CVDs can take many forms, such as that of coronary heart disease, heart attack, congenital heart disease, aneurysm, heart failure, hypertension, stroke and arrythmias[16]. In particular, more than half of the total yearly deaths in Europe is caused by CVDs, while cancers are the second leading cause of death in the same area[17]. Moreover, 60 million European individuals are currently living with (mostly type 2) diabetes, a condition known for duplicating the risk of premature death of those affected by it, when compared to non-diabetic patients[18]. Respiratory diseases are instead responsible of 12% of yearly infant deaths in the European region, while obesity is indirectly responsible for 10-13% of premature deaths in the area[19]. Additionally, both musculoskeletal conditions (MSCs) and mental disorders are leading causes of disability. It must also be noticed that, apart from type

[11] Ibid.

[12] "For the current 2023 fiscal year, low-income economies are defined as those with a GNI per capita, calculated using the World Bank Atlas method, of $1,085 or less in 2021; lower middle-income economies are those with a GNI per capita between $1,086 and $4,255; upper middle-income economies are those with a GNI per capita between $4,256 and $13,205; high-income economies are those with a GNI per capita of $13,205 or more."
"World Bank Country And Lending Groups – World Bank Data Help Desk", *Datahelpdesk.Worldbank.Org*, 2022, https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.

[13] "Non Communicable Diseases", *Who.Int*, 2022, https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases.

[14] Susanne Giesecke et al., "Drivers and Trends of Future Developments of Non-Communicable Diseases," *WP3 Horizon Scanning and Driver Identification*, March 31, 2016, https://www.foresight-fresher.eu/content/uploads/2018/03/d3-1-horizon-scanning-report-corrected.pdf.

[15] James A. Johnson, *Comparative Health Systems* ([S.l.]: Jones & Bartlett Learning, 2022).

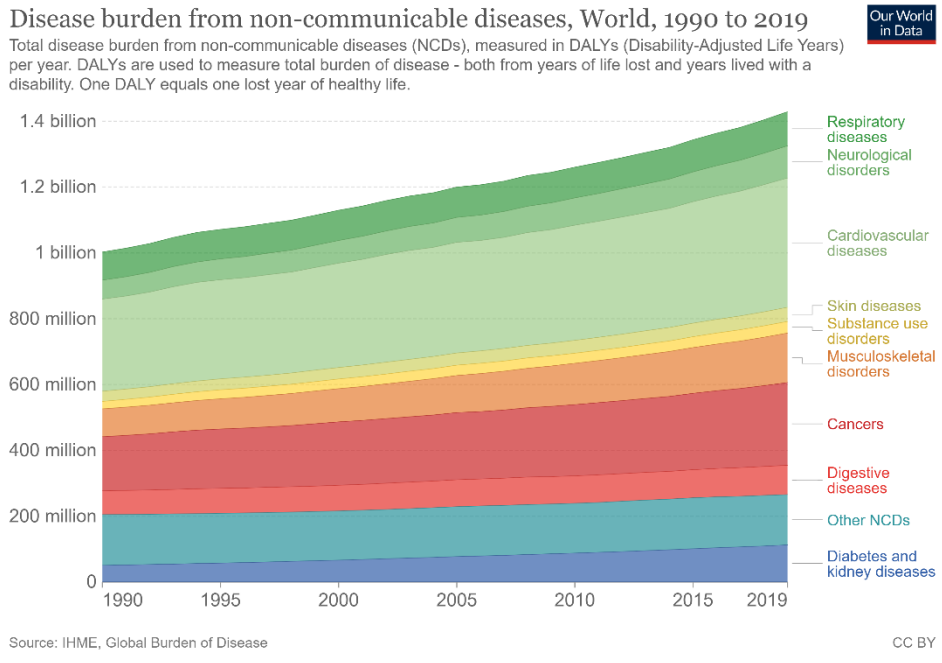
[16] Ibid.

[17] Susanne Giesecke et al., "Drivers and Trends of Future Developments of Non-Communicable Diseases," *WP3 Horizon Scanning and Driver Identification*, March 31, 2016, https://www.foresight-fresher.eu/content/uploads/2018/03/d3-1-horizon-scanning-report-corrected.pdf.

[18] Ibid.

[19] Ibid.

1 diabetes, the incidence of non-communicable diseases could be substantially diminished through adjustments in tobacco and alcohol use, diet and exercise regime[20]. What clearly stands out from the aforementioned data is that some form of action is urgently necessary to prevent as many cases of NCDs as possible, through the modification of the typical current human lifestyle. To help the reader better comprehend the impact of NCDs on our lives, a number of visual tools is going to be included in the paper at hand. The first example of a useful visual tool is the map below from "Our world in data", that portrays the increasing disease burden of our planet, measured in Disability-Adjusted Life Years (DALYs) per year, beginning in 1990 and ending in 2019. Notice that one DALY corresponds to one full year of healthy life that is lost due to the occurrence of non-communicable diseases.



[21]

Determinants and prevalence of non-communicable diseases

When it comes to what causes non-communicable diseases, four main determinants (defined as "factors contributing to the generation of a trait and affecting the occurrence or rate of occurrence of a disease[22]") have been individuated as responsible for increasing the mortality

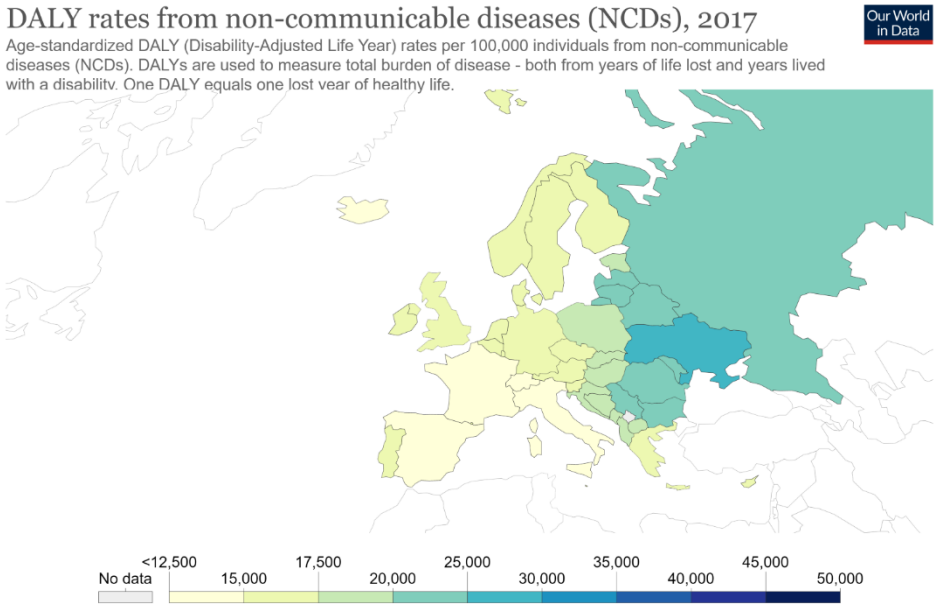
[20] Ibid.
[21] Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2019 (GBD 2019) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2021.
[22] Max Roser and Hannah Ritchie, "Burden Of Disease", Our World In Data, 2021, https://ourworldindata.org/burden-of-disease.

risk up to 2.5 times: in particular, they are alcohol and tobacco use, unhealthy diet and physical (in)activity, whose combined impact contributes to more than 20% of global Disability-Adjusted Life Years[23]. To be more precise, every year:

- 7.2 million premature deaths occur due to tobacco usage (taking into account second-hand smoke as well[24]),
- 4.1 million people lose their life due to the consequences of an excessive dietary sodium intake[25],
- 3.3 million individuals die prematurely due to health issues caused by alcohol abuse[26]and
- 1.6 million deaths are the indirect result of a copious lack of physical activity[27].

In particular, although an individual might be born with some type of congenital disease regarding the cardiovascular system, atherosclerosis (the most common form of coronary heart disease) can be largely prevented through the adoption of healthier habits, such as avoiding tobacco[28]. When it comes to cancer incidence, half of new cases could be easily prevented by eating healthily, reducing alcohol consumption, limiting sun exposure, avoiding unprotected sexual encounters, exercising regularly and not smoking[29]. The maps below from "Our world in data" show, respectively, disability-adjusted life years (DALYs) rates from non-communicable diseases in Europe per 100,000 individuals (data from 2017), and the burden from NCDs differentiated by subcategory in the same year, with data from 1990 to 2019. It is quite clear to the sight that Europeans from the Eastern (and poorer) part of the continent spend a larger section of their lives burdened by the consequences of non-communicable diseases, and that the most common NCDs in Europe are cardiovascular diseases and cancers.

[23] Ibid.
[24] "Non Communicable Diseases", *Who.Int*, 2022, https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases.
[25] Ibid.
[26] Ibid.
[27] Ibid.
[28] James A. Johnson, *Comparative Health Systems* ([S.l.]: Jones & Bartlett Learning, 2022).
[29] Ibid.



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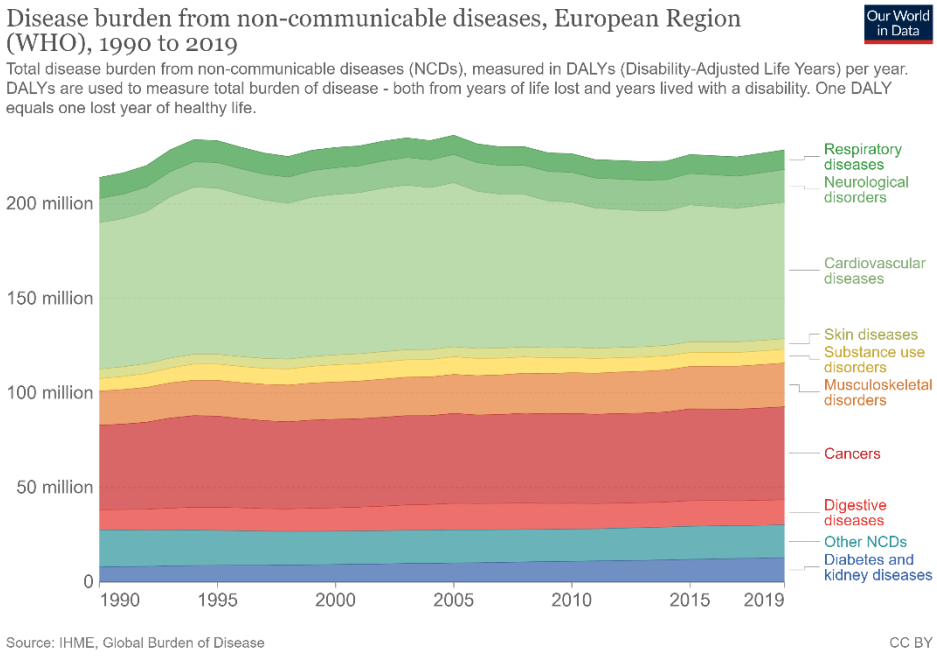


[31]

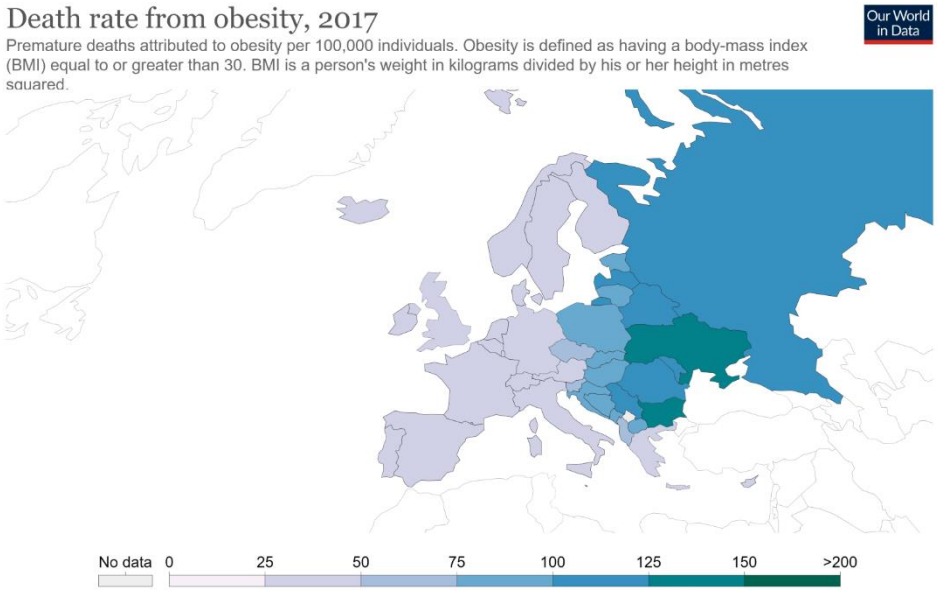
This paper will especially focus on unhealthy diet as a risk factor leading to non-communicable diseases, since it is estimated that as many as 2.7 million deaths a year may be globally

[30] Max Roser and Hannah Ritchie, "Burden Of Disease", Our World In Data, 2021, https://ourworldindata.org/burden-of-disease.
[31] Ibid.

attributable to diets low in fruits and vegetables[32]. Diet related diseases such as type 2 diabetes and obesity are known for leading to other non-communicable diseases, therefore causing 3.4 million deaths and 93.6 million DALYs a year (data from 2010)[33]. In particular, diabetes has been found to increase the risk of developing cardiovascular diseases, while obesity augments the chance of developing hypertension, coronary heart disease, stroke, certain cancers, obstructive sleep apnoea, COPD (i.e. chronic obstructive pulmonary disease), asthma, osteoarthritis and diabetes itself[34]. Moreover, diet itself has been proven to be directly related to the insurgence of cancer, CVDs, skeletal disease and sarcopenia: in particular, diet accounts for more than 30% of risk factors contributing to the onset of all forms of cancer; trans- and saturated fats are directly related to CVDs; human sodium intake is linked to hypertension and stroke; and assumption of foods high in glycaemic index can lead to a higher blood pressure and an 8% increase in the chance of developing breast cancer[35]. It should also be noted that members of poor, marginalised communities are at an even higher risk of dying from NCDs compared to people with a better socioeconomic status[36]. These scientific findings make it clear that human beings are going to need to change their dietary habits in order to lead healthier lives, and also that it is imperative for both national and European institutions to promote better nutritional choices and to implement policies that help narrow the health gap between low- and high-income citizens.

The maps below from "Our world in data" respectively show the yearly number of premature deaths directly attributable to obesity per 100,000 individuals in Europe (data from 2017) and the prevalence of diabetes in Europe expressed in percentage points (data from 2019). While diabetes is more uniformly spread through the continent, obesity-caused deaths are, again, much more common in the poorer Eastern side.

[32] Max Roser and Hannah Ritchie, "Burden Of Disease", Our World In Data, 2021, https://ourworldindata.org/burden-of-disease.
[33] Ibid.
[34] Ibid.
[35] Susanne Giesecke et al., "Drivers and Trends of Future Developments of Non-Communicable Diseases," *WP3 Horizon Scanning and Driver Identification*, March 31, 2016, https://www.foresight-fresher.eu/content/uploads/2018/03/d3-1-horizon-scanning-report-corrected.pdf.
[36] Ibid.



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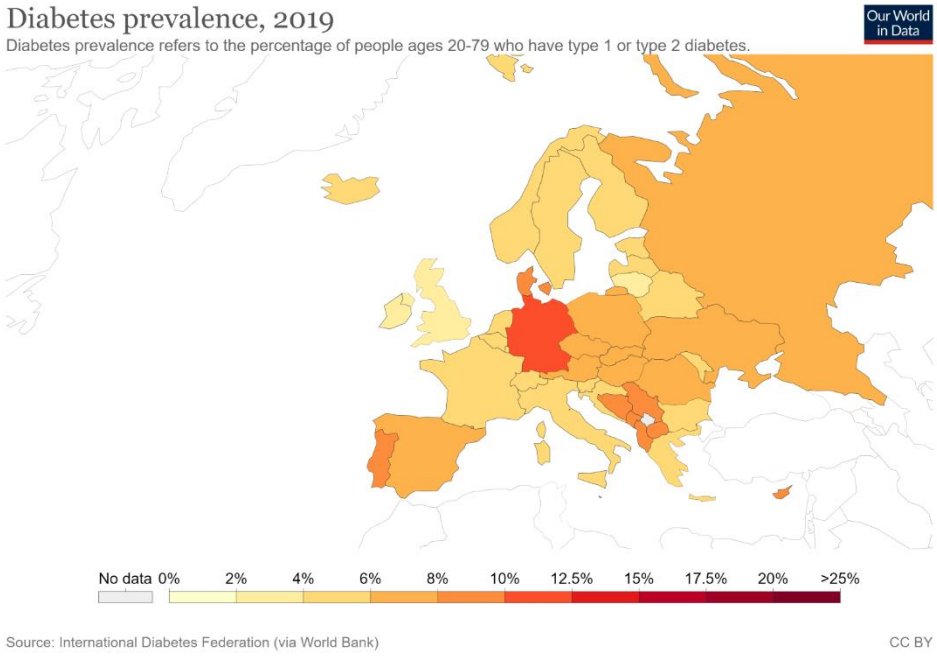

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A closer look at the data on mortality and disease in Europe can in fact lead to some interesting observations. For example, in Western Europe (in the study taken into consideration defined as "EU Member States before 2004"[39]) the probability of death for a man aged 65 and under is

[37] "Death Rate From Obesity", Our World In Data, 2021, https://ourworldindata.org/grapher/death-rate-from-obesity?region=Europe.
[38] Ibid.
[39] Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Portugal, Spain, Sweden, The Netherlands, United Kingdom.

of 16%, but 31% in Eastern Europe (i.e. "Member States who joined the Union after 2004"[40]) and 54% in Russia (non-member)[41]. There is a very considerable difference in the standardised death rates from CVDs between Western and Eastern countries[42]. Bulgarian citizens, for example, are subject to a risk of dying of a form of heart disease four times higher than the average Western European citizen[43]. While in Italy the probability of dying between the ages of 30 and 70 years old from cardiovascular diseases, cancer, chronic respiratory diseases and diabetes is of 10%, the same probability is of 30% in Russia (in the European Union, the countries that scored worst are Hungary, Latvia and Bulgaria)[44]. Among the reasons behind this difference, there might be the higher rates of tobacco usage, the less healthy diets and the rising blood pressure of Eastern citizens[45]. Furthermore, Eastern European children (especially those from Poland) are gaining weight faster than their Western counterparts[46], thus increasing their body mass index (BMI) and their risk of developing type 2 diabetes and other health concerns. What contributes to worsen the situation is that in the East roughly 73% of hypertension (i.e. high blood pressure) cases are currently not monitored[47]. The more we examine the available data, the clearer it seems that there is a health heterogeneity epidemic in the European Union. The picture, in fact, does not improve if we examine the morbidity and/or mortality rates linked to other types of non-communicable diseases. For instance, the population of Hungary is up to 45% more likely to die of cancer than the average individual of Western Europe (sometimes referred to as "EU 15")[48]. Cancer survival rates in the countries that accessed the European Union after 2004 are consistently lower than those registered in the "EU 15" States[49]. Also, Eastern European hospitals register a greater number of chronic lung disease cases treated each year[50].

[40] Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia.
[41] Lalla Attaiaa et al., "Report on Heterogeneity" *WP2 Mapping social, behavioural, and biomedical determinants of chronic diseases*, June 28, 2016, https://www.foresight-fresher.eu/content/uploads/2018/03/d2-4-report-on-heterogeneity.pdf .
[42] Ibid.
[43] Ibid.
[44] Ibid.
[45] Ibid.
[46] Ibid.
[47] Ibid.
[48] Ibid.
[49] Ibid.
[50] Ibid.

Developing the best diet to prevent non-communicable diseases (NCDs)

At the present time, the traditional Western diet is characterised by an excessive caloric intake that, however, oftentimes does not provide the optimal amount of health-promoting nutrients, such as MUFAs (i.e. mono-unsaturated fatty acids) and PUFAs (i.e. poly-unsaturated fatty acids) from fish, whole grain fibres, vitamin D, potassium, and other micronutrients from fruits and vegetables[51]. Moreover, even though cardiovascular risk factors have been discovered to be directly related to an excessive animal products consumption[52], nowadays Europeans are eating more and more meat but fewer and fewer plants compared to the past. The result of today's nutritional habits is a diet high in saturated fat, added sugars and salt[53], while what human beings should strive towards is a dietary regime as similar as possible to the guidelines of the European Code against Cancer, whose recommendations concerning nutrition are reported in the four points below.

- Eat plenty of whole grains, pulses, vegetables and fruits[54], potentially protective against all forms of cancer. Examples of whole grains include whole wheat flour and brown rice, while pulses are legumes like peas and beans.
- Limit high-calorie foods (foods high in sugar or fat) and avoid sugary drinks[55], that being high in calories but low in nutritional value are among the main responsibles of weight gain. It is worth noticing that pre-packaged snacks and fast-food products can frequently contain a much higher amount of kilocalories, fat and sugar compared to most homemade pies and desserts.
- Avoid processed meat and limit red meat[56], both associated to a higher risk of developing colorectal, stomach and pancreatic cancers, as well as to an overall higher cancer mortality.

[51] Christine Dawczynski, "A Study Protocol For A Parallel-Designed Trial Evaluating The Impact Of Plant-Based Diets In Comparison To Animal-Based Diets On Health Status And Prevention Of Non-Communicable Diseases—The Nutritional Evaluation (Nueva) Study", *Frontiers In Nutrition* 7 (2021), doi:10.3389/fnut.2020.608854.
[52] Ibid.
[53] Ibid.
[54] Joachim Schüz et al., "European Code Against Cancer 4Th Edition: 12 Ways To Reduce Your Cancer Risk", *Cancer Epidemiology* 39 (2015): S1-S10, doi:10.1016/j.canep.2015.05.009.
[55] Ibid.
[56] Ibid.

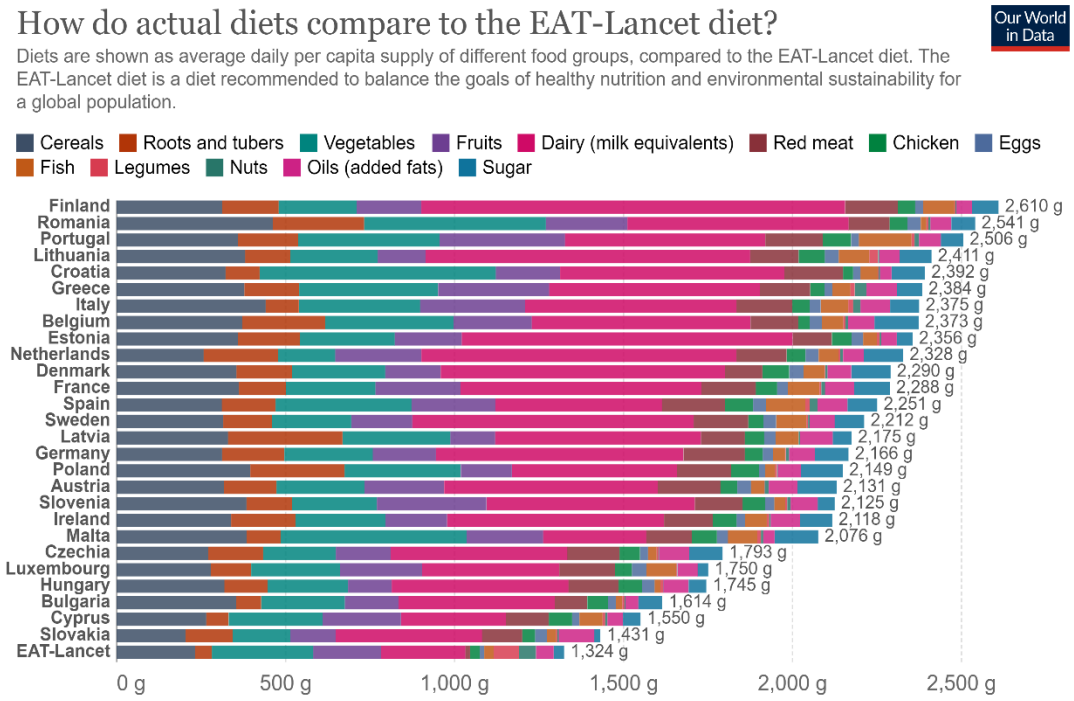
- Limit foods high in salt[57], positively associated with the onset of stomach cancer. Pre-packaged snacks and ready-made products are, once again, among the main responsibles of an excessive salt intake.

The optimal human diet that would allow mankind to grow old with minimal disease is made up, according to science, by mostly plant foods, with a large supply of fruits and vegetables, alongside legumes and whole grain starches[58]. When it comes to lean meat, poultry, low-fat dairy, eggs and fish, only modest amounts should be consumed, while fats should mainly be provided through high-quality vegetable oils, nuts and seeds[59]. Salt and high-calorie foods (such as pastry and cakes) should be limited, while highly processed commercial products (i.e. "fast foods" and sugary drinks) and alcohol should be avoided altogether[60]. Regrettably, when the general population of a country becomes more affluent, oftentimes the consumption of animal products increases as well, to the detriment of a much-needed optimal fibre intake (fibre is only found in plant-based foods). This happens because, historically, many cultures have tended to regard meat as a "wealthy people food", that the average worker could only afford a few times a year. The consequences of an increase of this size in the general consumption of meat include a great deal of downsides for human health but also for the worsening conditions of our environment[61]. In fact, it has been estimated that the livestock industry contributes to the total greenhouse gas emissions of our time by an amount of 12-18%, thus accelerating the current trend of climate change[62].

Let us now compare the average diet of the European Union countries with the recommendations of the EAT-Lancet Commission, focused on a diet that is both optimal for human health and sustainable for our planet in the long run[63]. The suggestions given highly emphasise the beneficial effects on our bodies of fruits, vegetables, nuts, whole grains, plant proteins (beans, lentils, pulses) and unsaturated plant oils, with the addition of modest amounts of meat and dairy, plus some added sugars and starchy vegetables, that are even

[57] Ibid.
[58] What diet?, "European Code Against Cancer - What Is A Healthy Diet?", Cancer-Code-Europe.Iarc.Fr, 2021, https://cancer-code-europe.iarc.fr/index.php/en/ecac-12-ways/diet-recommendation/39-healthy-diet.
[59] Ibid.
[60] Ibid.
[61] See Chapter III for further detail.
[62] Neus González et al., "Meat Consumption: Which Are The Current Global Risks? A Review Of Recent (2010–2020) Evidences", *Food Research International* 137 (2020): 109341, doi:10.1016/j.foodres.2020.109341.
[63] The implications of our eating habits on the health of our environment are going to be explored in depth in Chapter III.

less salutary for us[64]. The graph below from "Our world in data" shows how EU citizens from all countries of the Union consume daily more food than recommended: in particular, among the nutrients excessively ingested, we can observe starchy vegetables, dairy products, red meat and added sugar. There are no major differences between Western and Eastern Europe, a natural consequence of the way in which Eastern countries have been quickly catching up with their richer counterparts towards a typical (yet mostly unhealthy) "developed world diet".



[65]

[64] "The EAT-Lancet Commission On Food, Planet, Health - EAT Knowledge", *EAT*, 2022, https://eatforum.org/eat-lancet-commission/.

[65] "How Do Actual Diets Compare To The EAT-Lancet Diet?", *Our World In Data*, 2022, https://ourworldindata.org/grapher/eat-lancet-diet-comparison?country=EAT-Lancet~AUT~BEL~BGR~HRV~CYP~CZE~DNK~EST~FIN~FRA~DEU~GRC~HUN~ITA~IRL~LVA~LTU~LUX~MLT~NLD~POL~PRT~ROU~SVK~SVN~ESP~SWE.

Chapter II

Fat taxes: a miraculous panacea?

"Citius mori aut tardius ad rem non pertinet, bene mori aut male ad rem pertinet; bene autem mori est effugere male vivendi periculum.".
("It is not a question of dying earlier or later, but of dying well or ill. And dying well means escaping from the danger of living ill."[66])
- *Lucius Anneus Seneca, Epistulae morales ad Lucilium (Epistula LXX)*

Health policies: an overview

Let us start on a positive note: in the last 150 years, health care is the human endeavour where both scientific research and governmental regulations proved to be most successful[67]. At the same time, the picture seems to only be getting worse, with European children and adolescents being classified as "obese"[68] at a rate ten times higher compared to the 1970s[69], resulting in an even larger obesity epidemic among adults, and thus lessening the health conditions of European citizens as a whole. Since we are going to discuss health policies, it is of paramount importance to know what the term stands for: having already defined "health" in the previous chapter, let us specify what we mean by "policy". The word "policy" is an umbrella term that may include both written documents and unwritten practices, both explicit directives and implicit principles, both formal laws and informal actions[70]. However, we are mostly interested in written laws, documents and procedures created by the government to achieve a certain outcome in the broader society (that is, public policies). We should also remind ourselves that the planned intent of a certain policy does not always result in the desired outcome[71]. Finally, the policy-making process is usually understood as consisting of four steps:

[66] Unofficial translation.
[67] James A. Johnson, *Comparative Health Systems* ([S.l.]: Jones & Bartlett Learning, 2022).
[68] According to the WHO, an obese person suffers from "abnormal or excessive fat accumulation that presents a risk to health". A body mass index (BMI) over 30 is considered to indicate obesity.
"Obesity", *Who.Int*, 2022, https://www.who.int/health-topics/obesity#tab=tab_1.
[69] Benedetta Mattioli, Maria Giovanna Quaranta and Stefano Vella, "Review On The Evidence On Public Health Impact Of Existing Policies", Foresight-Fresher.Eu, 2021, https://www.foresight-fresher.eu/content/uploads/2018/03/d6-2-review-on-the-evidence-on-public-health-impact-of-existing-policies-corrected.pdf.
[70] World Health Organisation, *Health In All Policies*, 2015.
[71] Ibid.

1. Agenda-setting: the problem to be tackled is identified, the relevant research is conducted and the policy-making agenda is set;
2. Policy formation: different policy strategies and options are developed, then negotiations take place and in the end a policy is formulated;
3. Policy implementation: the formulated policy is implemented through the area of relevant jurisdiction, and its proper application is (or, more realistically, ought to be) enforced;
4. Policy review: after carefully monitoring the implementation process and the outcomes that have been achieved through the policy, the measure is evaluated and its degree of efficacy (or lack thereof) is reported to the competent authorities[72].

Having now clarified our understanding of what a policy is and how it comes into being, let us turn back to the practical realm and ask ourselves a question. Would the European Union be entitled to implement health policies that may help prevent non-communicable diseases? The answer is positive: in fact, to this regard, article 9 of the Treaty on the Functioning of the European Union (TFEU) states: "In defining and implementing its policies and activities, the Union shall take into account requirements linked to the promotion of a high level of employment, the guarantee of adequate social protection, the fight against social exclusion, and a high level of education, training and *protection of human health*.". Additionally, article 168(1) TFEU affirms: "A high level of *human health protection* shall be ensured in the definition and implementation of all Union policies and objectives. Union action, which shall complement national policies, shall be directed towards *improving public health, preventing physical and mental illness and diseases, and obviating sources of danger to physical and mental health. Such action shall cover the fight against the major health scourges, by promoting research into their causes, their transmission and their prevention, as well as health information and education, and monitoring, early warning of and combating serious cross-border threats to health*. The Union shall complement the Member States' action in reducing drugs-related health damage, including information and prevention.". However, harmonised policies at the European level are yet to be properly developed.

In the meantime, several Member States of the European Union (EU) have been implementing various health policies to promote better dietary choices over the years, the most (un)famous probably being "fat taxes", which can be defined as taxes placed upon unhealthy foods (usually

[72] Ibid.

saturated or hydrogenated/trans fats, sugar, junk food, sweetened beverages) with the aim of discouraging harmful dietary choices[73]. During the XX century some economists, first of all Arthur Pigou, had in fact begun to advocate for special surcharges for goods and services generating negative externalities (namely, indirect costs to individuals), such as alcohol, tobacco, gambling and environmental emissions[74]. The *European Food and Nutrition Action Plan 2015-2020* by the World Health Organisation thus recommended the introduction of Pigouvian taxes on foods displaying high contents of energy, (saturated) fat, (added) sugar and sodium, following the example set by a number of EU Member States who had already done so at national level[75]. The table below[76] shows the various types of "fat taxes" that have been implemented throughout the European Union in recent years.

Table 1: "fat taxes" currently in place in the European Union

	Sweetened beverages	Energy drinks	Chocolate	Confectionery	Ice cream	Salty snacks	Saturated fat
Denmark	x[77]		x	x	x		x[78]
Finland	x		x	x	x		
France	x	x					
Hungary	x	x	x	x	x	x	

"Fat taxes" are only one example of a wider range of pricing policies, which focus on increasing the price of potentially harmful foods and/or reducing the price of potentially beneficial foods in order to improve the nutritional quality of diets consumed, to earn income to support other public health activities or government expenditures, and to give a clear message to consumers about which foods are better for their health[79]. What have also proven to be highly cost-effective are food content policies, which plan for mainstream food products to be reformulated

[73] Silke Thiele and Jutta Roosen, "Obesity, Fat Taxes and Their Effects on Consumers," *Regulating and Managing Food Safety in the EU*, 2018, pp. 169-193, https://doi.org/10.1007/978-3-319-77045-1_9.
[74] Alberto Alemanno and Ignacio Carreño, "Fat Taxes in the EU Between Fiscal Austerity and the Fight Against Obesity," *European Journal of Risk Regulation* 2, no. 4 (2011): pp. 571-576, https://doi.org/10.1017/s1867299x0000163x.
[75] Paolo R. Vergano and Blanca Salas Ferrer, "Taxing and Marketing Restrictions of 'Foods High in Fat, Salt or Sugar' in the EU," *European Journal of Risk Regulation* 7, no. 3 (2016): pp. 597-603, https://doi.org/10.1017/s1867299x00006115.
[76] Data source: Silke Thiele and Jutta Roosen, "Obesity, Fat Taxes and Their Effects on Consumers," *Regulating and Managing Food Safety in the EU*, 2018, pp. 169-193, https://doi.org/10.1007/978-3-319-77045-1_9.
[77] Abolished in 2014.
[78] Abolished in 2013.
[79] Franca D'Angelo et al., "Compilation Of Current Public Health Policies In Different European Regions", Foresight-Fresher.Eu, 2021, https://www.foresight-fresher.eu/content/uploads/2018/03/d-6-1-compilation-of-current-public-health-policies-in-different-european-regions-corrected.pdf.

to minimize their content of salt, added sugar, saturated fat, and trans fatty acids[80]. In particular, the reduction of salt intake and the substitution of trans fats with PUFAs has been proven to be especially cost-effective, while more studies are needed on the replacement of saturated fats with unsaturated fats in commercial products[81]. Food content policies may also involve micronutrient fortification of staple foods in places where micronutrient deficiencies are a public health issue, as well as improved nutritional quality of meals offered in public institutions[82]. Moreover, public awareness campaigns to promote healthier nutritional choices have also been proven to be quite cost-effective[83].

"Fat taxes" in light of the common market

Since the early days of the European Economic Community (EEC), the main task of the European Union from an economic standpoint was the creation of a "common market". Article 2 of the Treaty establishing the European Economic Community (also known as the Treaty of Rome) stated indeed: "The Community shall have as its task, *by establishing a common market and progressively approximating the economic policies of Member States,* to promote throughout the Community, a harmonious development of economic activities, a continuous and balanced expansion, an increase in stability, an accelerated rising of the standard of living and closer relations between the States belonging to it". Article 26(2) of the Treaty on the Functioning of the European Union defines the common market as "an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured". The common market, interchangeably called "internal market" as well, apart from the four fundamental freedoms just mentioned, necessitates "the elimination of all obstacles to intra-[Union] trade in order to merge the national markets into a single market bringing about

[80] Franca D'Angelo et al., "Compilation Of Current Public Health Policies In Different European Regions", Foresight-Fresher.Eu, 2021, https://www.foresight-fresher.eu/content/uploads/2018/03/d-6-1-compilation-of-current-public-health-policies-in-different-european-regions-corrected.pdf.
[81] Benedetta Mattioli, Maria Giovanna Quaranta and Stefano Vella, "Review On The Evidence On Public Health Impact Of Existing Policies", Foresight-Fresher.Eu, 2021, https://www.foresight-fresher.eu/content/uploads/2018/03/d6-2-review-on-the-evidence-on-public-health-impact-of-existing-policies-corrected.pdf.
[82] Franca D'Angelo et al., "Compilation Of Current Public Health Policies In Different European Regions", Foresight-Fresher.Eu, 2021, https://www.foresight-fresher.eu/content/uploads/2018/03/d-6-1-compilation-of-current-public-health-policies-in-different-european-regions-corrected.pdf.
[83] Benedetta Mattioli, Maria Giovanna Quaranta and Stefano Vella, "Review On The Evidence On Public Health Impact Of Existing Policies", Foresight-Fresher.Eu, 2021, https://www.foresight-fresher.eu/content/uploads/2018/03/d6-2-review-on-the-evidence-on-public-health-impact-of-existing-policies-corrected.pdf.

conditions as close as possible to those of a genuine internal market"[84]. Both negative and positive integration might be used to create the internal market, where the latter type of integration is mostly exemplified by harmonisation of diverse national laws, while negative integration is pursued by removing national barriers to free trade[85]. "Fat taxes", in particular, may affect the free movement of goods, which has always been traditionally considered the most fundamental freedom within the common market. In fact, for negative integration to properly take place, internal taxation within the European Union must be completely neutral when it comes to competition between domestic and imported products[86], and "fat taxes" may hinder the said neutrality. Article 110 TFEU states indeed: "[1] No Member State shall impose, directly or indirectly, on the products of other Member States *any internal taxation of any kind in excess of that imposed directly or indirectly on similar domestic products*. [2] Furthermore, no Member State shall impose on the products of other Member States *any internal taxation of such a nature to afford indirect protection to other products*."

Firstly, "fat taxes" may result in foreign goods being discriminated to the advantage of "similar" domestic goods, thus violating paragraph 1. An example of an indirectly discriminatory tax can be found in *Commission v. France*: in that case, France was taxing light-tobacco and dark-tobacco cigarettes in different ways, independently of their origin. However, the types of cigarettes taxed in the most convenient manner were mostly French, while most cigarettes falling under the least favourable tax regime were imported. The Court of Justice of the European Union ruled indeed that, since the two types of cigarettes were "similar", the French tax scheme was taxing foreign goods in excess of similar domestic products[87], thus violating Article 110(1) TFEU. Let us now understand why a similar phenomenon could happen with "fat taxes" by looking at the Hungarian public health product tax introduced in 2011. Since the adult population of Hungary was made up for its two-thirds by obese individuals, and since the country had one of the highest per capita sodium consumptions in the world, the government resolved in 2011 to start taxing fruit jams, sugary beverages, confectionery, energy drinks, condiments, salted snacks and flavoured alcohol[88]. A reduction in the consumption of the incriminated products has been documented indeed, especially due

[84] Case 15/81, *Gaston Schul Douane Expediteur BV v. Inspecteur der Invoerrechten en Accijnzen, Roosendaal* [1982] ECR 1409, para. 33.
[85] Schütze Robert, *European Union Law* (Cambridge, United Kingdom: Cambridge University Press, 2015).
[86] As stated in Case 193/85, *Cooperativa Co-Frutta Srl v. Amministrazione delle finanze dello Stato* [1987] ECR 2085, para. 25 and Case 252/86, *Bergandi v. Directeur général des impots* [1988], ECR 1342, para. 17.
[87] Case C-302/00, *Commission v. France (Dark Tobacco)* [2002] ECR I-2055, paras. 22-30.
[88] WHO Regional Office for Europe, *Using Price Policies to Promote Healthier Diets.*

to food manufacturers which have been upgrading their formulas in order to avoid the tax[89]. While the gradual shift to healthier ingredients' lists in Hungarian snacks and beverages is certainly a positive consequence of the tax, this also means that less and less Hungarian products will be taxed in future since they have been increasingly complying with the new public health tax; therefore the majority of taxed products will be of foreign origin. Let us look for example at the tax rate for sugar-sweetened beverages: according to the Hungarian scheme, only those containing more than 8 grams of added sugar per 100 millilitres will be taxed[90]. Let us now imagine that a foreign company is importing its sugary beverage with 9 grams of added sugar per 100 ml to Hungary: even though the foreign product is "similar" to sugary Hungarian beverages (because it has similar characteristics and meets the same needs from the point of view of consumers[91]), it will be taxed in excess of those, since most Hungarian drinks are now limiting their sugar content to 8 grams maximum according to the new tax. Of course, this is only a hypothesis, so we are not implying that the Hungarian tax (or any other "fat tax") will certainly eventually violate Article 110 TFEU, but we are analysing what *might* happen in a hypothetical but still very realistic scenario. The table below[92] illustrates the details of the Hungarian tax regime regarding unhealthy foods, with currency expressed in the 2015 exchange rate.

Table 2: the Hungarian tax regime

	Sugar sweetened beverages € per litre	Energy drinks[93] € per litre	Confectionery[94] Chocolate[95] € per kg	Salty snacks[96] € per kg
2011	0.016	0.80	0.32	0.64
2012	0.023[97]	0.80	0.42	0.80

Secondly, "fat taxes" may end up favouring domestic production over like or "directly competitive or substitutable" imported goods, resulting in a violation of paragraph 2 of article 110 TFEU. An example of a tax indirectly protecting domestic products that are in competition

[89] Ibid.
[90] Ibid.
[91] See Case 45/75, *Rewe-Zentrale des Lebensmittel-Großhandels GmbH v. Hauptzollamt Landau/Pfalz* [1976] ECR 181.
[92] Data source: Silke Thiele and Jutta Roosen, "Obesity, Fat Taxes and Their Effects on Consumers," *Regulating and Managing Food Safety in the EU*, 2018, pp. 169-193, https://doi.org/10.1007/978-3-319-77045-1_9.
[93] Methylxanthines >15 mg/100 ml or taurin >100 mg/100 ml
[94] Added sugar >25 g/100 g
[95] Added sugar >40 g/100 g
[96] Salt >1 g/100 g
[97] Added sugar >8 g/100 ml

with imported ones can be found in *Commission v. United Kingdom (Beer & Wine)*[98]: in this case, the Commission was questioning the British tax regime whose excise tax for wine (almost not produced at all in Great Britain) was astronomical compared to that of beer (widely produced in the country). The United Kingdom claimed that wine and beer were not in competition since beer was mass-consumed by British people while wine was seen as a more luxurious good to be only consumed in special occasions[99]. However, the reason behind that could at least partly be found in the high taxation regime of wine: without it, beer and wine could actually be in competition according to the Court[100], who ruled that the British tax was violating Article 110(2) TFEU. A situation similar to the indirectly discrimination of *Commission v. United Kingdom*[101] was actually about to take place in France in 2012-2013, when the French Senate's Committee on Social Affairs proposed the introduction of an excise tax on vegetable oils high in saturated fat, such as palm oil, in order to reduce the amount of saturated fats consumed by French nationals[102]. Since Nutella would have been one of the most taxed products due to its palm oil content, the tax started to be informally called "Nutella tax". However, the majority of saturated fats in the French diet actually come from domestic animal products such as cheese and butter, therefore the "Nutella tax" would not have been very successful at reducing their intake[103]. It would only have discriminated against foreign goods such as coconut and palm kernel oil while indirectly protecting French foods rich in saturated fats, therefore it never came into place since it would have not been compatible with EU law. Nevertheless, it must also be reported that France has actually managed to put in place a different, non-discriminatory "fat tax": since 2011 all non-alcoholic beverages with added sugar have in fact been taxed (€7.16 per each hectolitre of sugary beverage) in a comparable way, thus proving that "fat taxes" can also be implemented in a fair manner[104]. Moreover, the tax has been quite effective in reducing the sales of sweetened drinks. The table below[105] exemplifies the French tax regime regarding sugary beverages.

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[98] Case 170/78, *Commission v. United Kingdom (Beer & Wine, Interim Judgement)* [1980] ECR 417, paras. 6-14.

[99] [13] Schütze Robert, *European Union Law* (Cambridge, United Kingdom: Cambridge University Press, 2015).

[100] Ibid.

[101] See also Case 168/78, *Commission v. France (Whisky v. Cognac)* [1980] ECR 347.

[102] Vergano and Salas Ferrer, "Taxing and Marketing Restrictions of 'Foods High in Fat, Salt or Sugar' in the EU".

[103] Ibid.

[104] WHO Regional Office for Europe, *Using Price Policies to Promote Healthier Diets.*

[105] Data source: Silke Thiele and Jutta Roosen, "Obesity, Fat Taxes and Their Effects on Consumers," *Regulating and Managing Food Safety in the EU*, 2018, pp. 169-193, https://doi.org/10.1007/978-3-319-77045-1_9.

Table 3: the French tax regime

	Sweetened beverages[106] - € per litre
2012	0.0716
2013	0.0731
2014	0.0745

Thirdly, since national "fat taxes" require additional certification at the border, they might cause administrative delays to the disadvantage of imported products[107]. An example of that can be found in the Danish tax on saturated fat that came into place in 2011 (and was subsequently abolished in 2013): all products containing said fats in a proportion higher than 2.3% of their weight were eligible to be taxed[108]. Domestic goods to be exported were exempted. Although the tax did not discriminate against foreign products, it subjected them to additional certification requirements: in fact, in order to determine if and to what extent they were to be taxed, their saturated fat content needed to be known by Danish authorities[109]. Was the additional burden justifiable in the name of public health protection? To this regard, let us recall article 9 TFEU, which states: "In defining and implementing its policies and activities, the Union shall take into account requirements linked to the […] *protection of human health*.". Additionally, as we had already mentioned, article 168(1) TFEU affirms: "A high level of *human health protection* shall be ensured in the definition and implementation of all Union policies and objectives [...].". However, the Danish "fat tax" was not that much effective at *protecting human health* since consumers often moved to cheaper versions of the taxed products and/or low-price discount stores in order to keep purchasing foods high in saturated fats[110]. Moreover, since manufacturers face high administrative costs when a tax such as the Danish one is implemented, these costs may end up passing to all consumer prices, not just taxed products' prices, thus hindering the primary aim of the tax (i.e. in this case, reducing the consumption of saturated fats by increasing their price to consumers, with the broader objective of protecting public health)[111]. Furthermore, both articles 9 and 168 TFEU are about Union policies (promoting health among other things), not national ones. The table below[112] shows

[106] Regardless of the amount of added sugar/sweetener
[107] Alemanno and Carreño, "Fat Taxes in the EU Between Fiscal Austerity and the Fight Against Obesity".
[108] Ibid.
[109] Ibid.
[110] Thiele and Roosen, "Obesity, Fat Taxes and Their Effects on Consumers".
[111] Ibid.
[112] Data source: Silke Thiele and Jutta Roosen, "Obesity, Fat Taxes and Their Effects on Consumers," *Regulating and Managing Food Safety in the EU*, 2018, pp. 169-193, https://doi.org/10.1007/978-3-319-77045-1_9.

the different tax regimes that have been in place in Denmark regarding unhealthy foods, with currency expressed in the 2015 exchange rate.

Table 4: the Danish tax regime

	Sugar sweetened beverages/juices € per litre	Chocolate/confectionery € per kg	Saturated fat € per kg
Before 2001	0.13		
2001	0.22		
2003	0.15		
2007	0.12	1.90	
2010	0.076[113] - 0.145[114]	1.90[115] - 2.38[116]	
2012	0.076 - 0.212	2.71 - 3.18	2.14
2013	0.079 - 0.220	2.81 - 3.30	Abolished
2014	Abolished		

This section concludes by arguing that, although a small portion of "fat taxes" might actually be at risk of non-compliance with article 110 TFEU, this is not an endogenous characteristic of all said taxes. We have indeed shown that, even if those kinds of regimes could end up discriminating against foreign goods to the advantage of national products, or favouring domestic production to the detriment of competing foreign goods, it is not a general prerogative of "fat taxes" to do so. In fact, the case of the 2011 French tax on beverages containing added sugar shows that it is entirely possible to tax unhealthy foods and/or drinks without any form of unintended indirect discrimination. Most importantly, our results provide evidence for the feasibility of a new regime of national Pigouvian taxes that target human dietary choices while still being in conformity with the prohibition of fiscal barriers to the free movement of goods, such as custom duties and discriminatory taxation, prescribed by the Treaty on the Functioning of the European Union. Future research could also consider the potential effects of a Union-wide "fat tax" on a range of chosen harmful foods: setting a Pigouvian excise at EU level would in fact contribute to the protection of human health while refraining from potentially undermining the functioning of the internal market. Human health protection is in fact mentioned not only in articles 9 and 168 TFEU, but also in article 169(1) TFEU, which states: "In order to promote the interests of consumers and to ensure a high level of consumer protection, the Union shall contribute to protecting the *health*, safety and economic interests of consumers, as well as promoting their right to information, education and to organise

[113] <0.5 g sugar/100 ml
[114] >0.5 g sugar/100 ml
[115] <0.5 g sugar/kg
[116] >0.5 g sugar/kg

themselves in order to safeguard their interests.". This hypothesis of a future European public health tax scheme (based in particular on articles 114[117], 153[118] and 168 TFEU, which enable the Union to adopt health legislation) may thus be a good starting point for discussion and further research.

"Fat taxes" and their effectiveness

Having now clarified the compliance of "fat taxes" with the Treaty on the Functioning of the European Union, before concluding the chapter let us also observe the possible effects of said taxes on governments, manufacturers and consumers. In fact, we are not simply interested in upholding EU law, but most importantly in improving the health conditions of ordinary citizens through public policies. Table 5 sums up the entire spectrum of probable consequences that may take place after implementing a "fat tax". Firstly, State revenues are bound to increase: for instance, estimations have computed that the Danish tax on saturated fat would have resulted in an additional yearly revenue of €160 million, or €74 per household[119]. We are thus affirming the beneficial effect of our chosen policy instrument for the public account balance, but what about their effects on *people*? Indirect consequences stemming from the behaviour of manufacturers will be analysed first. Manufacturers can react in various ways. They may decide to reformulate their most taxed products by reducing their fat/salt/sugar content or by removing certain harmful ingredients, if doing so is feasible (as in the Hungarian case): such a change would inevitably result in a positive effect on consumers' health. Manufacturers may also decide to bear a part of the economic burden created by the tax, in order to raise their final price by the least possible amount and avoid the generation of an additional economic burden that would negatively impact consumers. The downside of such a measure is that it hinders the intended effect of the tax, namely trying to force consumers to change their damaging eating habits towards healthier ones. Furthermore, we have already explored in the present chapter what happens when the creation of a "fat tax" results in more administrative costs for manufacturers: for instance, in the Danish "saturated fat tax" case, the additional costs

[117] Para. 3: "The Commission, in its proposals envisaged in paragraph 1 concerning health, safety, environmental protection and consumer protection, will take as a base a high level of protection, taking account in particular of any new development based on scientific facts. Within their respective powers, the European Parliament and the Council will also seek to achieve this objective.".
[118] Para. 1: "[...] the Union shall support and complement the activities of the Member States in the following fields: (a) improvement in particular of the working environment to protect workers' health and safety [...].".
[119] Ibid.

amounted to €27 million[120], that might however be passed to the consumers' prices of the entirety of food items produced by a certain firm, not just those targeted by the tax. The consequences of manufacturers' reactions to the introduction of a Pigouvian excise are thus not clearly predictable: they could be either positive or negative for the health of the general population.

Table 5: an overview of the effects of "fat taxes"

Governments	Manufacturers	Consumers
Generation of revenue	Reformulation of their products?	Switch to a less costly version of the product?
	Bearing a part of the economic burden?	Switch to healthier alternatives?
	Rise in the administrative costs?	Loss of purchasing power[121]
		Effects on health: which ones?

When it comes to their direct consequences, "fat taxes" may once again result in both positive and negative changes on consumers' health. For example, the effect of such measures might be negative when, as in the case of the Danish tax on saturated fat, a considerable number of citizens react by switching to a cheaper version of the same damaging food. The situation could even worsen if, for instance, citizens chose to switch to hydrogenated margarines due to a rise in the final price of butter. However, consumers may also decrease their consumption of a certain product after a substantial price increase: that is precisely the case of Finland, where confectionery, chocolate, ice cream and soft drinks are all taxed independently from their sugar content[122] (see table 6 below). The demand for all types of taxed items, in fact, has registered a steady decrease in Finland after the price increase[123]. A similar situation has been observed in France, where consumers' demand for both regular and low-calorie cola has gone down after the introduction of a tax on sweetened beverages[124]. Experimental studies also proved that a reverse tax would be helpful as well: subsiding healthier products (fresh fruit, vegetables, low-fat snacks) in order to reduce their prices does, in fact, result in an increase in their consumption[125]. Moreover, experimental studies showed that increasing soft drinks' prices by

[120] Ibid.
[121] Analysed in depth in Chapter III.
[122] Ibid.
[123] Ibid.
[124] Ibid.
[125] Ibid.

35% in a hospital cafeteria results in a 26% drop in soft drinks' sales[126]. Furthermore, while an educational campaign focused on the negative effects of said drinks on weight gain did not result in a changed nutritional behaviour, the combination of a 35% price increase with the educational campaign caused a 36% decrease in soft beverages' sales[127]. The same scenario was portrayed in a university cafeteria, where students preferred healthier, lighter options when the prices of health-harming foods were increased[128]. Price elasticity has been proven through experimental studies to be extremely similar among caloric and less caloric food items: when presented with the choice to buy either an energy-dense snack or a healthier alternative (fruits, vegetables), even children consistently chose the cheaper option[129].

Table 6: the Finnish tax regime[130]

	Soft drinks € per litre	Chocolate / confectionery / ice cream € per kg
Before 2011	0.045	-
2011	0.075	0.75
2012	0.11	0.95
2014	0.11[131] - 0.22[132]	0.95

However, Pigouvian tax regimes inevitably cause a loss of purchasing power as well for the general population, and a considerable number of studies have painted a very different picture from the one described above, where "fat taxes" have almost always proven to be effective to reduce the consumption of unhealthy foods. In fact, when compared to light or moderate consumers, researchers have discovered that heavy drinkers of sugary products are less responsive to price increases[133]. This indicates that those who weren't the true issue in the first place may be impacted more by a tax on such beverages. Moreover, although – according to research – individuals are likely to consume less of a certain product (for example, red meat) when its price rises, this leaves them with the choice of what to eat in its place (this is called

[126] Ibid.
[127] Ibid.
[128] Ibid.
[129] Ibid.
[130] Data source: Silke Thiele and Jutta Roosen, "Obesity, Fat Taxes and Their Effects on Consumers," *Regulating and Managing Food Safety in the EU*, 2018, pp. 169-193, https://doi.org/10.1007/978-3-319-77045-1_9.
[131] Sweetener based beverages and mineral water.
[132] Sweetened beverages.
[133] L. Cornelsen et al., "Why Fat Taxes Won't Make Us Thin", *Journal Of Public Health* 37, no. 1 (2014): 18-23, doi:10.1093/pubmed/fdu032.

"own-price effect")[134]. A portion of the intake is likely to be replaced with an alternative that ideally is healthier (in this case, white meat), yet in reality it may actually be less healthy (such as salt-coated potato chips) or simply more affordable (such as lower quality red meat)[135]. Additionally, people may continue to purchase the suddenly more expensive product while consuming less of other meals, particularly nutrient-dense foods, in order to continue to afford their favourite type of junk food. This is referred to as "income effect"[136], by whom lower income individuals are more likely to be impacted, since they spend a disproportionately larger portion of their income on food. Such a scenario would be the exact opposite of our original intent. Finally, evidence shows that, as a reaction to the introduction of "fat taxes", manufacturers may use reformulation techniques that modify the quality of processed foods by utilizing less expensive ingredients that are not necessarily healthier (as in the case of Hungary) than the original ones[137]. If we look at food industries through the globe, we discover, for instance, that a prominent soft drink company in Mexico reportedly decided to redesign the formulation of its products by replacing regular sugar (i.e. the taxed ingredient) with high fructose corn syrup, as a reaction to the implementation of a "fat tax" policy[138]. Corn syrup, however, is incredibly worse for human health than cane sugar, although it was not being targeted by that specific policy. Again, this is an instance of a health policy producing the opposite effect of the one intended. Although there are many studies and real-life examples on the benefits of "fat taxes" for human health, there are also as many of them on their negative consequences.

We thus conclude this chapter with a thought-provoking question: in the case of Pigouvian tax regimes that prove to be harmful more than beneficial to human health, who is most harmed? Which stratus of society is more harmed by a policy that decreases the purchasing power of the general public? Individuals with a lower socio-economic status are the most probable victims of such harm. In fact, while wealthier citizens might still be able to afford both taxed and non-taxed food items, the situation is quite different for poorer people. "Fat taxes" may then end up aggravating existing social inequalities, when they sort out the negative effects described in the previous paragraph. Chapter III is therefore going to dive deep into the link between health and

[134] Ibid.
[135] Ibid.
[136] Ibid.
[137] Ibid.
[138] Ibid.

inequalities, and the type of public policies that might be able to improve the first without worsening the latter.

Chapter III

Overlooking the duty to love our neighbour

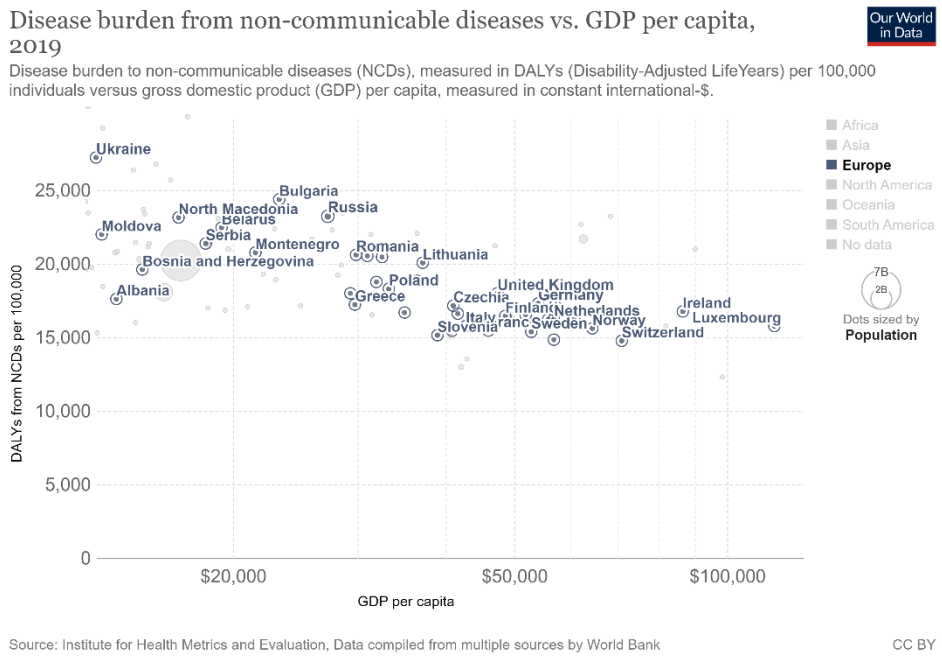
"Life is an opportunity, benefit from it. Life is beauty, admire it.
Life is a dream, realise it. Life is a challenge, meet it.
Life is a duty, complete it. Life is a game, play.
Life is a promise, fulfil it. Life is sorrow, overcome it.
Life is a song, sing it. Life is a struggle, accept it.
Life is a tragedy, confront it. Life is an adventure, dare it.
Life is luck, make it. Life is too precious, do not destroy it.
Life is life, fight for it.".
- *Mother Theresa, Life is*

Are we equal?

"When we look at the modern man, we have to face the fact that he suffers from a kind of poverty of the spirit, which stands in glaring contrast to his scientific and technological abundance. We have learned to fly the air like birds, we have learned to swim the seas like fish... and yet we have not learned to walk the Earth as brothers and sisters."[139]. In the previous chapter, we argued that so called "fat taxes" may not only be helpful in influencing the dietary choices of common citizens, but also that they are not for the most part, at risk of non-complying with European Union law. However, we also discovered that, according to both studies and real-life evidence, they are not the miraculous panacea we were hoping for, since they may also be a possible cause of wider inequalities. Let us know continue the discussion, starting by taking into account some reflections stemming from meditating upon the quote reported above. Hearing the late Martin Luther King Jr. pronounce the aforementioned words ought to make us reflect that no policy might be considered an adequate solution to the currently rising incidence of non-communicable diseases, if said policy infringes upon the (already low) chances of a disadvantage citizen to secure a healthy meal for his own family. In fact, our analysis must also take into account that, for people with a low socioeconomic status, eating healthy can sometimes be especially difficult, since items such as organic produce and whole

[139] Transcript of a speech by Martin Luther King Jr., as aired in the 1990 documentary movie "Berkeley in the Sixties", produced and directed by Mark Kitchell.

grains (in the form of flours, pastas, breads and snacks) are usually more expensive than their less nutritious counterparts like non-organic fruits and vegetables and refined grains[140]. Moreover, for the same reason it is highly unlikely that, when eating out, low-income families choose higher-end quality restaurants compared to cheaper fast-food places. The graph below from "Our world in data" shows the disease burden in European (not only EU) countries resulting from living with non-communicable diseases, measured in DALYs per 100,000 individuals versus gross domestic product (data from 2019). It is easily noticeable that citizens of poorer countries, such as Ukraine, spend more years of their lives affected by forms of disabilities caused by NCDs compared to nationals of richer countries, such as Luxembourg.

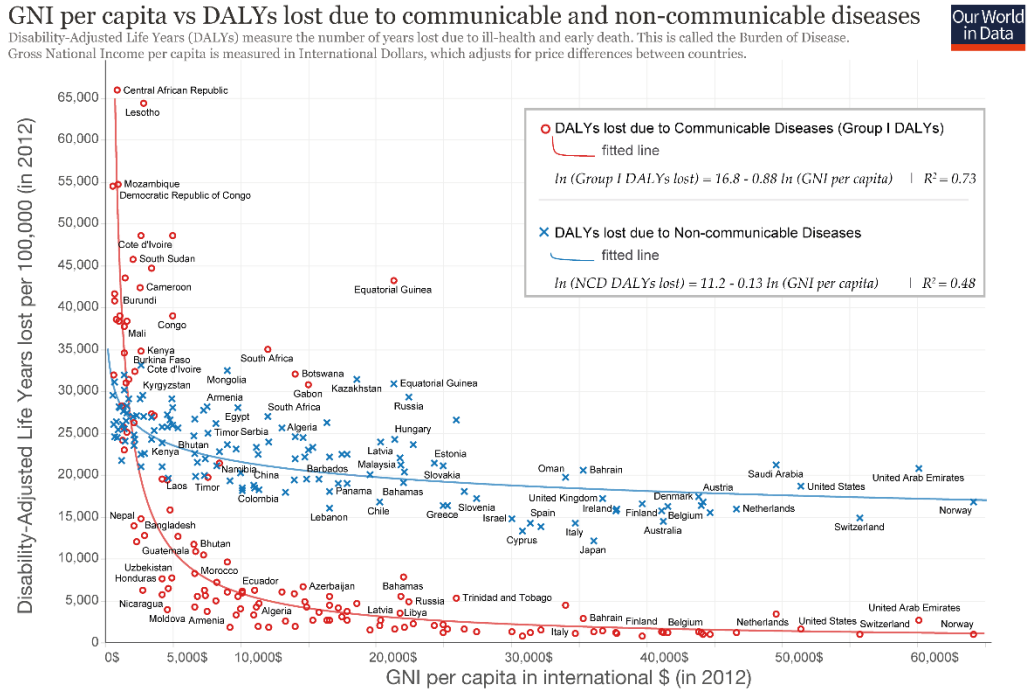


[141]

In general, individuals with a low socioeconomic status and/or residing in underprivileged or marginalized communities are more likely to die from non-communicable diseases compared to members of more advantaged groups and communities[142]. The main cause of illness and mortality in low- and middle-income nations is indeed represented by NCDs[143]. In comparison to groups with a higher socioeconomic status, people with a lower socioeconomic status

[140] Nicholas R. V. Jones et al., "The Growing Price Gap Between More And Less Healthy Foods: Analysis Of A Novel Longitudinal UK Dataset", *Plos ONE* 9, no. 10 (2014): e109343, doi:10.1371/journal.pone.0109343.
[141] Max Roser and Hannah Ritchie, "Burden Of Disease", *Our World In Data*, 2022, https://ourworldindata.org/burden-of-disease#the-disease-burden-from-non-communicable-diseases.
[142] Susanne Giesecke et al., "Drivers and Trends of Future Developments of Non-communicable Diseases", *WP3 Horizon Scanning and Driver Identification*, March 31, 2016, https://www.foresight-fresher.eu/content/uploads/2018/03/d3-1-horizon-scanning-report-corrected.pdf .
[143] Ibid.

frequently show higher rates of tobacco usage, higher blood pressure, and a number of other risk factors for non-communicable diseases[144]. The social gradient is also influenced by the cultural background, public policies tackling social and health-related issues, and the national GDP growth rate[145]. A potential future implication of what has just been described would be a European society highly divided not only in terms of wealth but also in terms of health. Pricing policies like those described in Chapter II (in particular, subsidies to reduce the consumer price of healthy food alternatives: the exact opposite of "fat taxes"!) become then not just helpful in encouraging citizens to make healthier grocery choices but also crucial in their allowing poorer communities to buy items such as fresh produce and whole grains at a lower price compared to other, potentially harmful foods. The graph below shows the correlation between gross national income (GNI) per capita and DALYs lost due to both communicable and non-communicable diseases, on a global scale. If we focus our attention on the burden of diseases caused by NCDs (coloured in blue here), we will notice an inverse proportionality between the growth of GNI per capita and the number of years lost due to ill health.



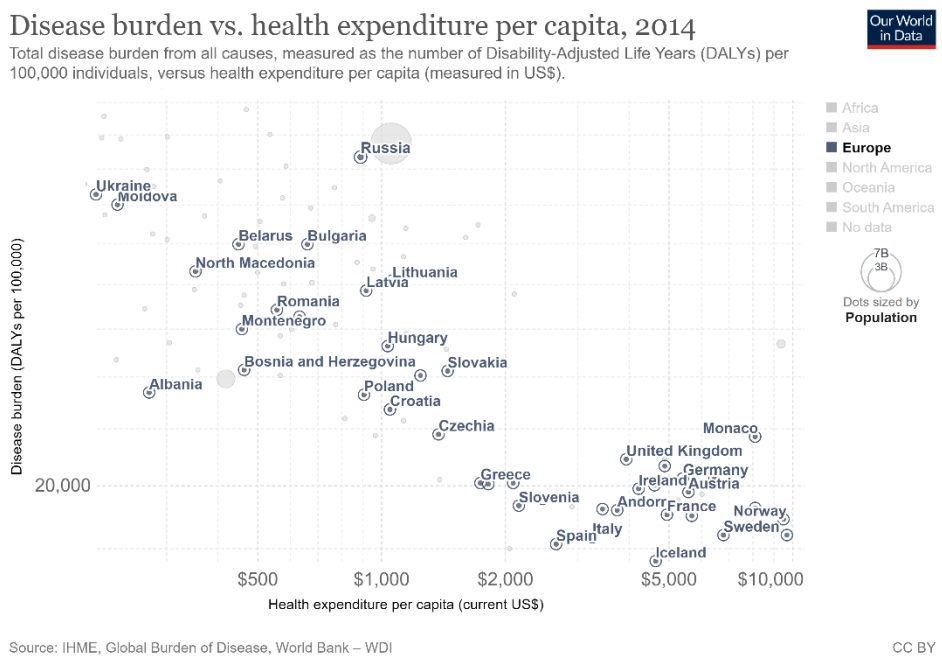
Data source: Sterck, O., Roser, M., Ncube, M., Thewissen, S. 2017 – Allocation of development assistance for health: Is the predominance of national income justified? (forthcoming in Health Policy and Planning)
This data visualization is available at OurWorldinData.org where you find more research and visualizations on this topic.
Licensed under CC-BY-SA by the author Max Roser. [146]

[144] Ibid.
[145] Ibid.
[146] Max Roser and Hannah Ritchie, "Burden Of Disease", *Our World In Data*, 2022, https://ourworldindata.org/burden-of-disease#the-disease-burden-from-non-communicable-diseases.

The role of social determinants of health (SDHs)

The World Health Organisation website explains that the non-medical elements that affect health outcomes are referred to as social determinants of health (SDH)[147]. They include the larger group of factors and systems influencing the conditions of daily life, and the circumstances in which people are born, are raised, work, live, and age[148]. These factors comprise political regimes, societal norms, social policies, economic policies and systems, and development goals[149]. Health inequalities (that we can define as the unjust yet preventable variations in health status found within and across countries), are significantly influenced by social determinants of health[150]. Health and sickness follow a social gradient across nations of all income levels: the poorer and the more disadvantage an individual is, the worse his health gets[151]. Social determinants of health are instances that can both positively and negatively affect health equity[152]. Some examples of SDHs might be: income and social security; job instability and/or time spent outside the employment system; education level; workplace conditions; food scarcity; systemic conflict; development in early infancy years; quality of housing; pollution level; social inclusivity; access to reasonably priced quality health care[153]. According to research, social determinants of health might be more influential than medical care or individual choices in determining the quality of a person's health. Numerous studies, for example, discovered that SDHs are responsible for 30-55% of all health outcomes[154]. Furthermore, other estimations reveal that the contribution of all non-health sectors combined to collective health outcomes exceeds the contribution of the health sector alone[155]. Properly addressing the role social determinants play in health outcomes is critical to improve the general health of a population and gradually erase long-date health disparities, thus necessitating active effort from both all sectors and the broader civil society[156]. The graph below compares the total disease burden (from all causes) in Europe to the amount of health expenditure per capita: an inverse correlation is clearly noticeable.

[147] "Social Determinants Of Health", *Who.Int*, 2022, https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1.
[148] Ibid.
[149] Ibid.
[150] Ibid.
[151] Ibid.
[152] Ibid.
[153] Ibid.
[154] Ibid.
[155] Ibid.
[156] Ibid.



[157]

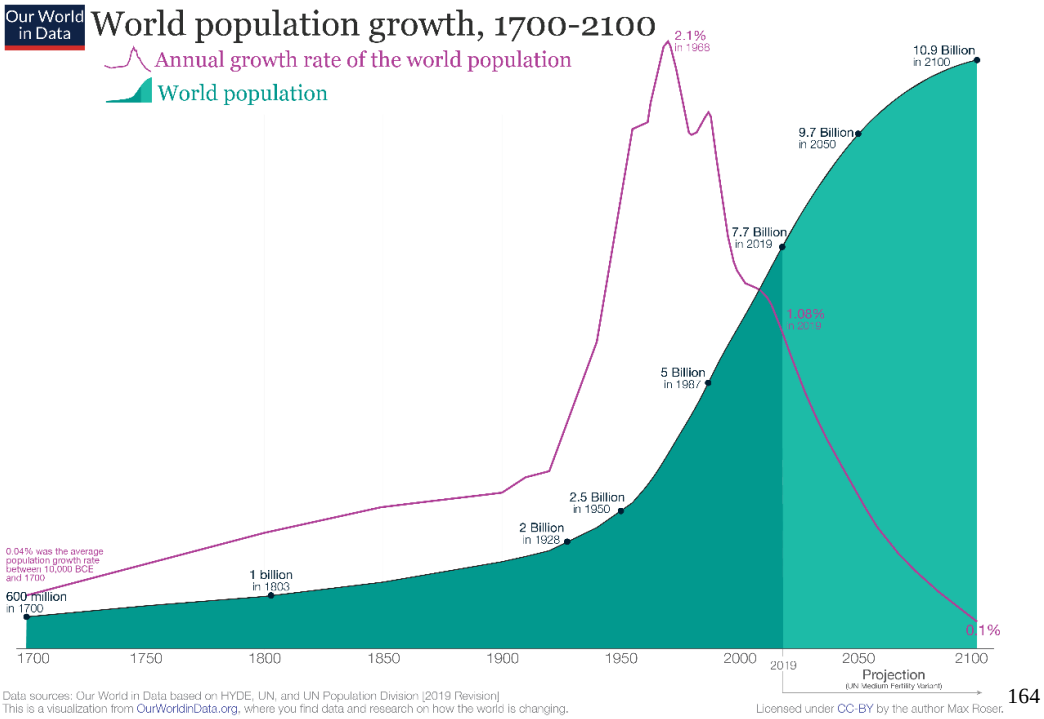
We have already stated in the beginning of this paper that the use of fiscal policy (i.e. the use of government expenditure and taxation regimes to alter macroeconomic conditions) to affect food costs "in ways that support healthy eating" has been advised by the World Health Organization to all nations[158]. Lamentably, at the present time the majority of public financial incentives through the world favour the consumption of highly processed, energy-dense foods, that kilocalorie by kilocalorie end up resulting extremely cheaper than less processed, less caloric and more nutritious foods[159]. When arguing about the recipients of public funds in his own country (the United States of America), best-selling author and journalist Michael Pollan writes: "Very simply, we subsidize high-fructose corn syrup in this country, but not carrots. While the surgeon general is raising alarms over the epidemic of obesity, the President is signing farm bills designed to keep the river of cheap corn flowing, guaranteeing that the cheapest calories in the supermarket will continue to be the unhealthiest."[160]. And European countries are no exception: while we may be still consuming traditional saccharose rather than

[157] Max Roser and Hannah Ritchie, "Burden Of Disease", *Our World In Data*, 2022, https://ourworldindata.org/burden-of-disease#the-disease-burden-from-non-communicable-diseases.
[158] Benedetta Mattioli, Maria Giovanna Quaranta and Stefano Vella, "Review On The Evidence On Public Health Impact Of Existing Policies", Foresight-Fresher.Eu, 2021, https://www.foresight-fresher.eu/content/uploads/2018/03/d6-2-review-on-the-evidence-on-public-health-impact-of-existing-policies-corrected.pdf.
[159] Ibid.
[160] Michael Pollan, *The Omnivore's Dilemma*, 2006.

high-fructose corn syrup, in our supermarkets the healthier options (such as organic, raw vegetables) are nevertheless more costly than pre-packaged snacks high in salt and sugar.

Before exploring more in depth the types of health policies that would be best to prevent non-communicable diseases without creating additional burdens on the weakest members of society, it is crucial to point out that we are living during an environmental crisis, and that living (and eating) as if this crisis is not an urgent matter will only result in the future in a diminished availability of healthy food for every member of the human race, especially those with a worse-off socio-economic condition. In fact, the first specimen of *homo sapiens* appeared on Earth 300.000 years ago, and since then, humans have had (and continue to have) a profound influence on the planet's biosphere[161]. The destruction of habitats on a large scale, followed by the enormous and abnormally quick mass extinction of plant and animal species, the acidification of water, the erosion of our soil, the ever-growing greenhouse effect that causes an unnatural rise in temperatures, and the deteriorating quality of our extremely polluted air are all ongoing processes that can now be directly attributed to humans. These processes are all the result of human activity on the planet[162]. Moreover, the current overpopulated condition of the planet is worsening the condition of our environment. The world population is indeed growing by an average of 81 million people per year, with a population which is expected to reach 10 billion persons in the year 2057[163] – the graph below from "Our world in data" displays how. Although the population growth rate is decreasing due to a global dramatic fall in birth rates, the total world population is still bound to increase for at least a century.

[161] "Homo Sapiens," The Smithsonian Institution's Human Origins Program, July 27, 2020, https://humanorigins.si.edu/evidence/human-fossils/species/homo-sapiens.
[162] Marcello Di Paola and Mirko Daniel Garasic, "The Dark Side of Sustainability: Avoiding and Shortening Lives in the Anthropocene," Rivista Di Studi Sulla Sostenibilità, no. 2 (2014): pp. 59-81, https://doi.org/10.3280/riss2013-002004.
[163] "Current World Population," Worldometer, accessed August 27, 2022, https://www.worldometers.info/world-population/.



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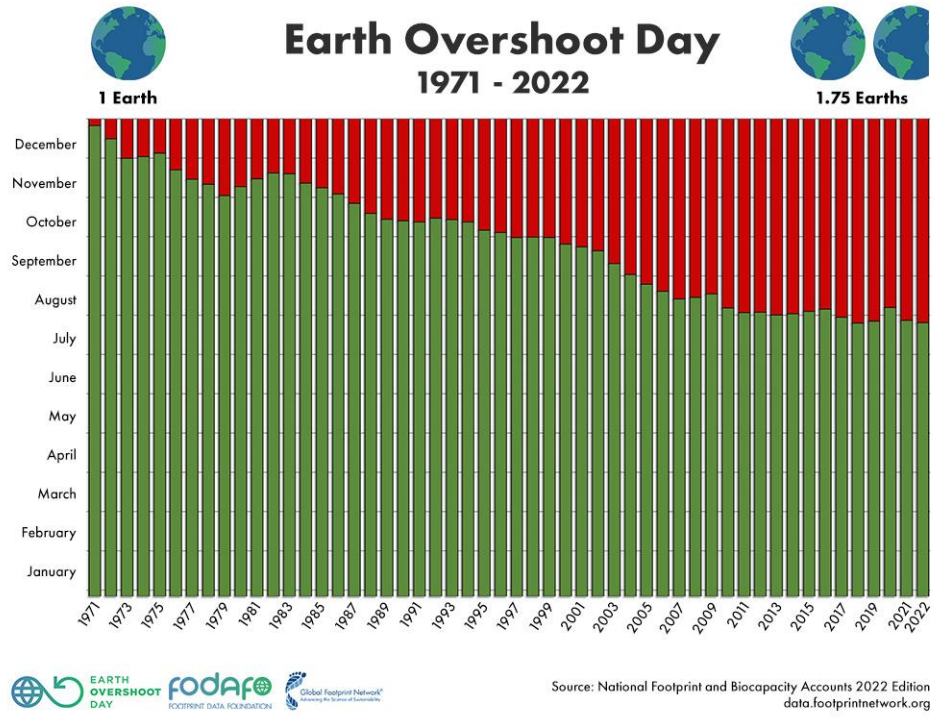
People are living longer than they ever have, in both developed and developing nations, and this datum, along with the fact that the developing world is still showing higher birth rates and higher average population growth rates compared to the developed world, means that in 2030, the population of low- and middle-income countries is expected to reach 7 billion, while the population of high-income countries is expected to be of "just" 1 billion. This means that the resources necessary for human existence and wellbeing, such as energy supply, fertile soil, food, and water, will not be available in sufficient amounts, particularly in low- and middle-income nations[165]. Furthermore, the global average life expectancy is now well over 70 years and still increasing in virtually every country[166], meaning that the world population is growing not only due to new births, but in large part also due to fewer deaths. An ageing population also creates an additional need for resources necessary to care for the elderly.

To conclude this section of Chapter III, we are introducing the concept of "Earth Overshoot Day", an expression used to mark every year the date in which "humanity's demand for ecological resources and services […] exceeds what the Earth can generate in that year"[167]. The

[164] Max Roser, "Future Population Growth," Our World in Data, May 9, 2013 (last update: November 2019), https://ourworldindata.org/future-population-growth.
[165] Marcello Di Paola and Mirko Daniel Garasic, "The Dark Side of Sustainability: Avoiding and Shortening Lives in the Anthropocene," Rivista Di Studi Sulla Sostenibilità, no. 2 (2014): pp. 59-81, https://doi.org/10.3280/riss2013-002004.
[166] Max Roser, Esteban Ortiz-Ospina, and Hannah Ritchie, "Life Expectancy," Our World in Data, May 23, 2013, https://ourworldindata.org/life-expectancy.
[167] See https://www.overshootday.org/.

Earth Overshoot Day for year 1970 was December 29, while its equivalent for 2020 has been identified with August 22, and for the current year 2022 with July 28. However, not all countries have the same impact on environmental pollution: the 2020 Earth Overshoot Day would land on February 10 if the entire world's population lived like in Qatar, but on December 20 if we all lived like in Jamaica. Among other States which excessively exploit the environment we can list Luxembourg, Canada, United Arab Emirates, United States of America, Australia, Belgium, Denmark, Finland – ordered from the most to the least polluting. Among other "virtuous" countries we can instead find Ecuador, Indonesia, Cuba, Iraq, Guatemala, Egypt, Colombia, El Salvador – ordered from the least to the most polluting[168].



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As Michael Pollan states, "the single greatest lesson the garden teaches is that our relationship to the planet need not be zero-sum, and that as long as the sun still shines and people still can plan and plant, think and do, we can, if we bother to try, find ways to provide for ourselves without diminishing the world"[170]. What are, therefore, the types of health policies that will help prevent the onset non-communicable diseases through changing our dietary habits, while

[168] "Country Overshoot Days 2022," Earth Overshoot Day, August 27, 2022, https://www.overshootday.org/newsroom/country-overshoot-days/.
[169] "Past Earth Overshoot Days," Earth Overshoot Day, August 27, 2022, https://www.overshootday.org/newsroom/past-earth-overshoot-days/.
[170] Michael Pollan, *The Omnivore's Dilemma*, 2006.

keeping an eye on the most optimal diet for the health of our environment, and without resulting in a more unequal society in terms of access to health services and beneficial foods?

Towards a healthier, more equal Europe?

The FRESHER Project (2015-2018), funded by the European Commission though the Horizon 2020 Framework, has hypothesised four different health scenarios for the future of Europe[171]. In the first scenario, nicknamed "The rich get healthier", by 2050 European societies have become more and more unequal, while most public services have been privatised[172]. Moreover, the economy is highly digitalised, with most wealth owned by a few multinationals, and the majority of the workforce is forced to constantly switch jobs, with consequent negative effects on both their physical and mental health[173]. Since medical research has been privatised, only the wealthiest members of society have access to best life-saving medical tools[174]. The average citizen is more confused than ever by the advertisement bombing in regard to health products, while misinformation is out of control. While privileged people manage to reach very old ages while staying healthy, people from the worse socio-economic strata of society either die younger or witness their quality of life lessened by the consequences of non-communicable diseases. This happens because fresh, organic foods have become even more costly, so the poor rely on cheaper options, such as junk food and ready-made products, to survive, while living in more polluted area without direct access to nature[175]. The second future scenario hypothesised by FRESHER is called "We will health you". In this scenario, the right to privacy has been lost due to the government's necessity to closely monitor the behaviour of each individual[176]. Here, the State is responsible for keeping its citizens healthy through the use of implanted micro-chips and a copious amount of health regulations. Redistribution measures, together with a highly industrialised agriculture, make sure that every step is directed towards the goal of social equity. Europe grows older while staying healthy, but the environment is neglected because of the economically utilitarian basis on which the system is built.

[171] "The Four FRESHER Scenarios - Foresight Fresher", *Foresight Fresher*, 2022, https://www.foresight-fresher.eu/fresher-project-results/four-fresher-scenarios/.
[172] Ibid.
[173] Ibid.
[174] Ibid.
[175] Ibid.
[176] Ibid.

The most desirable scenario would be the third, "Healthy together", where both equity and sustainability are the goal[177]. Social policies aim to achieve inclusivity, while universal healthcare is implemented. Cultural diversity is celebrated, together with a "slower", more aware, way of living. The economy is circular and decarbonised, while cities get greener and less polluted[178]. Here, Europe still grows older, but the elderly are active in society. People choose locally grown food for environmental reasons, due to a better education on the matter, and the agricultural practices become more sustainable. To the contrary, the fourth scenario would be the less desirable to get to by 2050, "Desolation health". Here, economic stagnation, a lack of social policies, and widespread corruption have all contributed to an extremely unequal society[179]. The European Union has lost its primacy in the global economy, while the only agencies still performing medical research are sponsored by pharmaceutical multinationals and insurance companies: the result is an abundance of pharmaceutical "quick fixes" only targeting symptoms and never their causes. Internet, rather than as an innovative or informational tool, is used by anxious citizens to escape the depressing reality[180]. The worsening of climate change provokes continual environmental emergencies, while sanguineous wars are fought over the control of the already scarce natural resources. Europe grows older while its healthcare systems collapse, leaving its citizens without any type of insurance. Metropolitan areas are constantly becoming more dangerous and polluted, while financial crises leave their citizens poorer and poorer[181]. A restricted number of multinationals produces the majority of food consumed worldwide, all highly processed and pre-packaged, resulting in unbalanced diets.

How are these hypothetical scenarios applied to the current reality? According to the FRESHER team, by 2030 we will witness in Central and Eastern Europe[182] the rise of a combination of the conditions of "The rich get healthier" and "We will health you", although the augmented citizens' empowerment would be more characteristic of the third scenario[183]. The forecasts anticipate a great economic growth in the area, faster than that of the Western part of the continent. Although economic inequalities between the different EU countries would diminish, the social and economic disparities within every Eastern and Central country would

[177] Ibid.
[178] Ibid.
[179] Ibid.
[180] Ibid.
[181] Ibid.
[182] Defined by FRESHER as Bulgaria, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia.
[183] Ibid.

have grown. The natural consequence would be an even greater disparity in terms of access to health facilities and general health conditions[184]. The Internet would provide a better path towards basic medical education, with the result of empowered citizens that are aware of which choices are most effective for the improvement and maintenance of their health status. However, the governments would most likely not be able to supply every citizen with the latest medical innovations, leaving the lowest socio-economic strata of society without proper healthcare. Climate change would still be an issue, with most environmental measures that prove to be too arduous to implement in a short amount of time. Finally, food automatization and industrialisation would be at an all-time high, resulting in a worsening quality of nutrition[185].

Let us know look at real health policies that have been put into place by European countries to improve their citizens' dietary habits, resulting in the intended outcome without a worsening of inequalities. One policy that has been proven to be effective and quite straightforward to implement is a virtual ban on trans-fat, started by Denmark in 2003[186]. What the government asked of Danish food producers was to reformulate their entire range of products within a year, so that no item sold in the country would contain more than 2 grams of trans fat per 100 g of total fat. The ban has been extremely effective in altering the nutrition profile of Danish dietary products without changing their market prices[187]. Moreover, trans fat consumption has dropped by 90% within the general population, and mortality from cardiovascular diseases has been decreasing in the country. Austria, Hungary, Iceland, Norway and Switzerland all followed the Danish example by going on to ban the sale of trans fat in their own countries as well. According to the World Health Organisation, the remaining European leaders should be alarmed by the fact that, in the areas where the use of trans fat is still not regulated, the average citizen is at risk of unknowingly consuming as much as 30 grams of harmful trans-fat per day[188]. People with a low socio-economic status are those more at risk, since oftentimes this type of fat is found in cheap pre-packaged snacks. Considering that the consumption of 5 g of trans fat per day leads to a 23% increase of developing coronary heart disease[189], every

[184] Ibid.
[185] Ibid.
[186] "Successful Nutrition Policies - Country Examples", *World Health Organisation*, 2022, https://www.euro.who.int/__data/assets/pdf_file/0004/259402/Successful-nutrition-policies-country-examples-Eng.pdf.
[187] Ibid.
[188] Ibid.
[189] Ibid.

European country ought to consider banning their usage in industrial products. However, not all potentially dangerous foods can be simply banned, like in the case of trans fat.

Salt, for instance, could never be banned altogether, since it is only its excessive consumption, rather than a regular one, to be harmful to human health. Moreover, even in the hypothetical case of a salt ban from industrial products, people would still add their own salt to homecooked meals, differently from the case of trans fat, which is not used to cook at home (provided that margarines do not contain some amounts). However, dietary salt is still a factor contributing to higher blood pressure and to the onset of cardiovascular diseases. The World Health Organisation states that, in this case, the goal should be to reduce its consumption to less than 5 grams per day[190]. Unfortunately, daily salt consumption in Europe varies within a range of 7-18 grams per day, all exceeding the recommended amounts[191]. Reformulating manufactured products to reduce their salt content, without raising their market price, is still useful, but this action has to be now paired with awareness campaigns in order to educate consumers on the potential damages caused by an excessive salt consumption and on the correct amounts to cook with. Finland has been employing educational campaigns since the 1970s: after explaining the effects of a salt abuse to its citizens, the country has swiftly proceeded to highlight the salt content on all its packaged products, also adding a "best choice" label to those with low levels of salt[192]. Salt consumption has dropped indeed, from an average of 12 grams per day of the 1970s to 6.5 g for women in 2002. However, the Finnish government has not yet reported to have reached the target of less than 5 g per day[193]. Since 2003, in the United Kingdom a similar awareness campaign has been paired with the reformulation of many products, that now contain 25-45% less salt than before. Before the implementation of these measures, the average UK citizen consumed 9.5 grams of salt per day, while in 2011 the amount had dropped to 8.1 g. Nonetheless, the target has not been reached[194].

Another example of health policy that can be implemented without further burdening the pockets of less privileged citizens is an improvement in public schools' meals. In 2010, Slovenia banned the employment of food and drink selling machines on school property[195]. Latvia has chosen instead to ban the provision of (both sugar- and artificially) sweetened drinks

[190] Ibid.
[191] Ibid.
[192] Ibid.
[193] Ibid.
[194] Ibid.
[195] Ibid.

to students. In general, European States are aiming to provide more fruits and vegetables in school lunches, while setting limits to the availability of foods high in salt, fat and sugar[196]. Those policies have all proven to be effective even beyond the time schedule, with students eating more fruits and vegetables and drinking less sweetened beverages even at home[197]. This chapter concludes by arguing that, even though "fat taxes" can be easy to implement while also providing additional income for national governments, they may also result in furtherly disadvantaging the disadvantaged. Subsidising policies that focus on lowering the price of healthy products rather than taxing less healthy items, as seen in Chapter II, can provide the same result of "fat taxes" without the additional burden on people with a low socio-economic status. Other effective policy actions include public awareness campaigns and the reformulation of industrial products in order to either remove or reduce their amounts of harmful nutrients. A better health scenario, however, cannot be achieved without reducing the existing inequalities through the implementation of social policies, and at the same time improving the conditions of our environment in order to keep natural resources available to all, rather than only to the few individuals who can afford them.

[196] Ibid.
[197] Ibid.

Conclusions

To summarise what we have discovered this far, it might be argued that now we possess the essential knowledge regarding non-communicable diseases, their prevalence, their determinants and the most effective diet to prevent their onset. Furthermore, we may now affirm with a certain level of confidence that, although "fat taxes" are quite simple to design and implement, and additionally they do not hinder national compliance of Member States with European Union law, they may indirectly create even more disadvantages for individuals belonging to lower socio-economic classes. What would be more appropriate to do for governments is designing policies catered towards reducing inequalities first and foremost, to then strive towards making healthy products cheaper and more readily available, alongside educating citizens on the best diet for their health. While it is most certainly true that one of a government's aims ought to be the improvement of the health conditions of its population, we argue that it is even more fundamental to aim at creating a society in which a person's health status is not determined by the place where they were born or the amount of liquidity available to them. Health is numbered among human rights by the World Health Organisation, and thus it ought to be held, at least in any country that would dare to consider itself civilised, at the same level of importance as other fundamental human rights, such as the right to life and freedom of speech.

This paper concludes by arguing that public healthcare interventions, both at the national and at the Union level, in the form of educational campaigns, food content policies and pricing policies are urgently necessary to safeguard the health of European citizens and better prevent the spread of non-communicable diseases. We have indeed shown that, although it is not the sole determinant in action, diet has a significant influence on the probability of developing NCDs. In fact, poor dietary choices may lead to a higher risk of emergence of diet-related diseases such as obesity and type 2 diabetes, which in turn might lead to other NCDs. Furthermore, inadequate nutrition regimes are also known for directly causing the onset of cancer, CVDs, skeletal disease and sarcopenia. The correct path towards the improvement of human health, from a dietary standpoint, would include an increase in the consumption of fruits, vegetables, legumes and whole grain fibres, a reduction in the usage of salt, high-calorie foods and red meats, and the avoidance of sugary drinks and processed meats. When it comes to actual policies, governments should focus on making healthier foods cheaper compared to less healthy options (instead of taxing unhealthy products in order to raise their consumer price), improving the nutritional content of mainstream packaged products, educating citizens

on the optimal food choices for their health, bettering the quality of public schools' meals and banning extremely harmful ingredients, such as trans-fat. However, beforehand it is fundamental to create a system where health inequalities are not the norm: policies tackling poverty should go hand in hand, or even come before, policies tackling nutrition choices. Subsequent analyses to reduce inequalities ought to focus on areas such as the introduction of a minimum wage, further investments in education, a guarantee of paid family leave, the expansion of paid apprenticeships. Future research could also consider the potential effects of Union-wide food pricing policies to contribute to the protection of human health while refraining from potentially undermining the functioning of the internal market. Finally, for interested readers, a detailed inventory of the sources used in the creation of this paper is presented in the subsequent bibliography and case law section.

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Summary in Italian

La nostra è un'epoca in cui le malattie croniche non trasmissibili (MCNT) costituiscono la prima causa di morte mondiale, arrivando a provocare la morte di 35 milioni di individui ogni anno. L'Organizzazione Mondiale della Sanità (OMS) informa che questo è un trend in salita: infatti, secondo le attuali stime, nel corso dei prossimi dieci anni le morti causate dalle malattie croniche aumenteranno del 17%. L'area globale più colpita è l'Europa, il vecchio continente, dove l'86% delle morti premature è attribuibile alle malattie croniche, caratterizzate da un decorso lungo e lento. Esempi di malattie non trasmissibili includono il diabete, le patologie cardiovascolari, le neoplasie (più note come tumori) e i problemi respiratori, che combinati costituiscono il 77% del totale. L'OMS afferma che, tra le cause principali della comparsa delle malattie croniche, un ruolo chiave è svolto dall'alimentazione occidentale spesso troppo ricca di chilocalorie, grassi saturi, zuccheri semplici e sodio. Per rimediare alla dieta non ideale dei cittadini europei, molti Paesi del vecchio continente hanno deciso di implementare politiche sanitarie atte al miglioramento dell'alimentazione delle proprie popolazioni, con lo scopo di prevenire la comparsa dei disturbi sopracitati. Bisogna però ricordare che, per stilare correttamente una politica sanitaria, sarebbe opportuno tenere a mente tre concetti nel corso del processo di creazione di tali politiche: il loro rapporto benefici-costi, il rispetto delle norme del diritto dell'Unione Europea e, come vogliamo sottolineare in questa sede, l'impatto delle disuguaglianze socio-economiche sulle singole scelte alimentari.

Il presente lavoro cita anche alcune delle circostanze, sfortunatamente sempre più comuni, in cui politiche sanitarie ideate per aiutare la popolazione a modificare in positivo la propria dieta sortiscono invece l'effetto opposto, ovvero quello di acuire il problema delle scelte alimentari poco sane, caratteristiche soprattutto delle fasce più povere della popolazione. Infatti, con il passare degli anni il cibo sano si è trasformato da nutrimento naturale dell'uomo comune a privilegio delle classi più abbienti. Gli snack preconfezionati, tipicamente ricchi di calorie "vuote" (fonte di grandi quantità di energia ma prive di nutrimento, come gli zuccheri semplici), e i piatti pronti, preparati impiegando grosse dosi di sale e grassi di scarsa qualità, sono infatti venduti a poco prezzo nei supermercati occidentali. I cereali integrali, sia al naturale che sotto forma di farine, pasta e prodotti da forno, sono più costosi dei loro equivalenti raffinati; frutta e verdura biologiche hanno un costo notevolmente più alto delle loro controparti classiche; il pesce fresco, scelta più salutare, è venduto a caro prezzo rispetto alle carni conservate; l'olio extravergine di oliva è sempre meno impiegato nelle produzioni industriali a favore dei meno cari oli di semi, caratterizzati però da un punto di fumo spesso più basso, e di

conseguenza maggiormente suscettibili al calore. Le aree urbane, dove è concentrata la maggior parte della popolazione in Occidente come in Oriente, offrono spesso scarse possibilità di movimento pedonale, trasformando gradualmente palestre e centri sportivi a pagamento nell'unica opzione per tenersi in forma. Nei quartieri popolari e nelle periferie cittadine, residenza di larga parte dei cittadini meno abbienti, la presenza di spazi verdi è sempre meno comune. Quello che si rischia è di arrivare ad una realtà quasi distopica, dove fasce diverse della popolazione conducono vite radicalmente diverse, che portano poi a condizioni di salute radicalmente diverse. Proviamo ad immaginare un simile mondo. Un cittadino benestante, in una realtà del genere, si ritroverebbe a vivere agiatamente in un quartiere residenziale i cui parchi offrono ampie possibilità di movimento all'aria aperta, e i cui supermercati biologici propongono una grande varietà di cibo salutare a caro prezzo, che non sarebbe però un disagio per l'individuo in questione. Al contrario, un cittadino meno abbiente, residente in un quartiere popolare ai margini di una metropoli, si troverebbe sin dal risveglio a respirare un'aria più inquinata, dalla qualità peggiore, a causa dell'altissima urbanizzazione della zona. Acquistare un abbonamento annuale alla palestra di quartiere lascerebbe il nostro personaggio fittizio con meno liquidità, ragion per cui l'acquisto di prodotti più salutari come pasta di farro, sostituti vegetali della carne e snack a base di farine di legumi rischierebbe di esaurire anche parte del salario destinato al pagamento delle spese fisse, come l'affitto o le utenze domestiche. Se è vero che le diverse possibilità economiche hanno creato per millenni diversissime condizioni di vita, nonché forti disuguaglianze tra le varie fasce socio-economiche della popolazione, gli eventi della seconda metà del ventesimo secolo lasciavano forse sperare in un futuro meno diseguale per l'Occidente. Una realtà come quella ipotizzata sopra costituirebbe quindi un enorme passo indietro per l'umanità, dopo i progressi iniziali del secondo dopoguerra.

Lo scopo del presente lavoro è quello di comprendere quali sono le politiche sanitarie che non danneggiano la parte più debole della popolazione. Di conseguenza, il primo capitolo si occupa delle malattie croniche non trasmissibili: dopo aver individuato i determinanti espliciti di tali disturbi, ne è stata trattata la prevalenza e l'alimentazione consigliata dalle principali autorità sanitarie per ridurne la comparsa. Una dieta scorretta non è l'unica causa delle malattie croniche, ma abbiamo scelto di focalizzarci su questa in quanto non sarebbe possibile in un lavoro di questo tipo analizzare nel dettaglio tutti i determinanti, che sono però in ogni caso brevemente menzionati per completezza. Il secondo capitolo è incentrato sulle politiche sanitarie nazionali più efficaci per ridurre l'incidenza delle malattie non trasmissibili, con un particolare focus sulle politiche che hanno come obiettivo quello di modificare le scelte

alimentari individuali, le cosiddette “fat tax”. Grande attenzione è data alla conformità di tali politiche con il Trattato sul Funzionamento dell’Unione Europea: infatti, alcuni tipi di imposte interne indirette messe in atto dagli Stati membri rischiano di creare un carico sproporzionato sui prodotti importati provenienti da Stati membri terzi, andando quindi a creare un conflitto con i principi del diritto dell’Unione Europea. Visto che le “fat tax” non sono armonizzate all'interno dell’Unione, le loro modalità di applicazione possono effettivamente essere molto diverse da un Paese all'altro. Un’attenta analisi della letteratura esistente in merito, della giurisprudenza europea sul tema e delle leggi nazionali presenti e passate ha portato alla conclusione che, in linea generale, le “fat tax” possano essere compatibili con il diritto europeo. Nonostante ciò, però, norme del genere sono proprio quelle che rischiano di acuire le disuguaglianze sociali esistenti, creando un onere maggiore per i cittadini meno abbienti. Il terzo capitolo, infatti, si occupa esattamente di tale problematica, andando alla ricerca di politiche semplici e poco costose da implementare, al pari delle “fat tax”, ma più efficaci nell’alleviare le disuguaglianze presenti. Vengono poi esplorati vari scenari futuri a cui si potrebbe arrivare con l’utilizzo di politiche diverse, con un particolare focus su uno scenario “ideale” dove le morti annuali causate dalle malattie croniche sono in diminuzione, ma lo sono anche le disparità sociali. Quello che si vorrebbe evitare è infatti l’impiego di politiche che porterebbero nel medio termine al miglioramento delle condizioni di salute delle classi medie e ricche, peggiorando al contempo la situazione di salute dei meno fortunati. Un esempio di simili politiche potrebbe essere costituito dalla totale privatizzazione del sistema sanitario, che porterebbe quindi ad avere un maggior numero di cittadini benestanti in ottima salute, ma anche più individui svantaggiati in condizioni di salute precarie. L’approccio qui proposto è radicalmente diverso da quello appena menzionato: il nostro obiettivo è quello di individuare le politiche sanitarie che renderebbero il nostro mondo meno ingiusto per tutti gli esseri umani, compresi quelli nati in situazioni particolarmente svantaggiate.