Child Obesity and Human Rights in the European Union

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I. Abstract

Food issues are generally associated with developing countries and conflict-affected areas, while developed countries are perceived as wealthier and therefore food secure. However, this common belief is a misconception. This misconception may be because the source of food insecurity between developing and developed societies stand in sharp contrast. In developing societies, the absence of food, e.g. starvation, is the primary cause of food insecurity. In developed societies, it is not the lack of food, but the accessibility to quality nutrition and food that drives nutritional insecurity. In particular, the nutrition insecurity in developed societies is due to the poor diet of low socioeconomic groups. The phenomenon of nutritional insecurity has increased amongst the EU population and is projected to continue on this trend. Child overweight and obesity are considered to be one of the largest public health issues of the past century, with worldwide epidemic dimensions. The World Health Organization estimated that there are over 41 million overweight and obese children globally under the age of 5, with every third child in the European Union (EU) considered to be overweight or obese.

Despite the existence of a specific human right to adequate food, recognized under international law, this phenomenon of nutrition insecurity continues to spread. Furthermore, even though this human right is mentioned in international documents, and a strong link between childhood obesity and overweight and low socioeconomic status has been irrefutably established, the Right to Adequate Food had thus far been largely ignored at the EU level. In this thesis, I will review and analyze the EU's role as a supranational legislator and policymaker in reducing child obesity in low socioeconomic groups. In particular, I will analyze this role through the lens of human rights as outlined by the International Covenant on Economic, Social and Cultural Rights (ICESCR), the Convention on the Rights of the Child (CRC) and the Charter of Fundamental Rights of the European Union (CFREU).

II. Key words

Obesity and Overweight

Child Obesity

Human Rights

Nutrition Security

Nutrition Insecurity

Obesity and Overweight Inequality

The Right to Food

The Right to Adequate Food

III. Abbreviation

EU	European Union
MS	Member States
UN	United Nations
NCDs	Non - Communicable Diseases
WHO	World Health Organization
BMI	Body Mass Index
HR	Human Rights
CRC	Convention on the Rights of the Child
CFREU	Charter of Fundamental Rights of the European Union
ICESCR	The International Covenant on Economic, Social and Cultural Rights
ECHR	The European Convention on Human Rights
FDHEP	The Food Dudes Healthy Eating Program

1. Summary

During the last 20 years, the number of obese people worldwide has more than doubled[1]. Current global estimates suggest that more people die from obesity and overweight than from underweight[1]. The increasing number of overweight and obese people frequently characterizes developed countries. It is commonly assumed that these problems are only associated with North America, made famous by popular press movies such as Super-Size Me (Morgan Spurlock). However, from all of the six World Health Organization (WHO) regions including North America, South America, Africa, Europe, Asia and Pacific, the European region is considered to be the region most influenced by obesity related non-communicable diseases (NCDs) including diabetes type II, cardiovascular disease, certain types of cancers, respiratory diseases, and even numerous mental health issues[2]. About 77% of total illness cases and 86% of the premature death cases in the European region are caused by NCDs[2].

The prevalence of overweight and obesity has tripled over the last three decades in the European Union (EU), particularly among children. The data indicates that childhood overweight and obesity in the EU has been observed mainly among children from low socioeconomic groups, and the increase in these groups has rapidly risen. In recent years, multiple studies have indicated the complicated correlation between a higher prevalence of overweight and obesity among low-income groups in western society; an obesity-poverty paradox[3]. The diet of low socioeconomic groups in developed countries are often based on cheaper and more affordable food products, which are less nutritious as they contain high amounts of energy and low amount of protein, minerals and vitamins[4]. In short, financial restrictions affect dietary choices, and lead to consumption of an inappropriate and poor diet[5] as unhealthy food is much more accessible compared to healthy diet. Over time, consuming an unhealthy diet can lead to overweight and obesity and in fact creates a situation of nutrition insecurity,

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[1] Obesity and Overweight. (2017). Fact Sheet. Retrieved from http://www.who.int/mediacentre/factsheets/fs311/en/ (last accessed 20 September 2017)

[2] WHO. (2014). *European Food and Nutrition Action Plan 2015-2020* (hereafter ' European Action plan 2015-2020')

[3] Borch, A., & Kjærnes, U. (2016). *Food security and food insecurity in Europe: An analysis of the academic discourse* (1975–2013). *Appetite,103*, 137-147. doi:10.1016/j.appet.2016.04.005

[4] Waters, E., Swinburn, B., Seidell, J., Uauy, R. (2010). *Preventing Childhood Obesity, Evidence Policy and Practice* (pp.131). UK: Blackwell Publishing Ltd BMJ Books.

[5] Bjorntorp, P. (2002). *International Textbook of Obesity*. (pp. 305-318). John Wiley & Sons, Ltd.

leading to a phenomenon of child overweight and obesity in low socioeconomic groups.

This leads to the right to food, which is recognized under the international human rights law in Art.11 of the International Covenant on Civil and Political Rights (ICESCR)[6]. The right to food is considered one of the basic measures of standard of living, and refers to adequate food as a basic human right, which should be adjusted for each age, gender, health status, economic status etc. However, there is no reference at EU level to the right to adequate food, not even in the context of child overweight and obesity in low socioeconomic groups. To date, the existing scientific data on the consequences of obesity, overweight and related diseases are well known and discussed at a worldwide level. Moreover, it is widely known which groups in a developed society are at greater risk of living the reality of nutrition insecurity resulting from diet inequality. This leads to the following questions: How is it possible that the phenomenon of obesity continues to grow each year within developed societies, mainly in the low socioeconomic groups? Can a legal framework address this type of issue? Can the problem be framed in legal terms? Who is the responsible authority under EU law? The thesis aim was to analyze and evaluate how the right to adequate food can be better considered under the EU actions to minimize and deal with the phenomenon of nutrition insecurity that leads to child obesity.

Through the thesis research I identified that there is no official reference at EU level to the right to adequate food (for unclear reasons). Yet the phenomenon is well known at EU level, and there have been attempts to minimize this with regulations and various programs such as the Fruits, Vegetables and Milk School Scheme and the EU Action Plan on Childhood Obesity 2014-2020. EU initiatives such as the school scheme plan are necessary and vital in order to cope with child overweight and obesity, and the EU should continue to promote and develop such programs. In order to increase the impact of these programs, the EU must address the right to adequate food through law, especially in the context of children, since they are considered to be a sensitive group. Moreover, promoting reforms through EU law can make it easier to reach and access the vulnerable groups in a developed society. Finally, the Union should consider harmonizing all the relevant regulations, programs, research and

[6] The International Covenant on Economic, Social and Cultural Rights, 16 December 1966.

recommendations which developed at EU level under one database in order to make it more available and accessible to MS which can facilitate implementation at MS national level.

2. Introduction

Overweight and obesity issue continue to be considered a worldwide problem. However, the statistics in the EU suggest that this problem continues to grow. The number of obese people in the European Union has tripled since the 1980's[7]. As a result of this epidemic, approximately 320,000 people in Western Europe die each year as a result of obesity and diet related diseases[8]. As overweight and obesity have become a global issue which characterizes all age groups, the World Health Organization (WHO) announced that childhood obesity is considered to be one the greatest public health issues of the last century[9]. This is especially concerning in terms of human rights because the long term impacts of child obesity are found to be more damaging than adult onset of overweight and obesity, as children who are overweight and obese at a young age are at higher risk of vulnerability to diet-related NCDs than adults who become overweight and obese later in life[10]. As is the case with the high prevalence of overweight and obese adults in the EU, the European Food and Nutrition Plan Act 2015-2020[11] has indicated that childhood overweight and obesity issues have become highly prevalent in the European region, mainly in the southernmost countries. Specifically, the prevalence of overweight and obesity in the region seems to be increasing rapidly among lower socioeconomic groups. It was identified that higher rates of child overweight and obesity have been observed mainly

[7] Obesity and Overweight Fact sheet, Supra note 1

[8] Żukiewicz-Sobczak, W., Wróblewska, P., Zwoliński, J., et al. (2014). *Obesity and poverty paradox in developed countries*. Annals of Agricultural and Environmental Medicine,21(3), 590-594. doi:10.5604/12321966.1120608

[9] Childhood overweight and obesity (2017). Global Strategy on Diet, Physical Activity and Health. Retrieved September from http://www.who.int/dietphysicalactivity/childhood/en/ (last accessed 20 September 2017)

[10] Waters, E., Swinburn, B., Seidell, J., Uauy, R. , Supra note 4

[11] European Action plan 2015-2020, Supra note 2

in the low socioeconomic groups, where the parents were less educated and the income inequalities in these countries were greater[12].

This connection also known as the obesity-poverty paradox, and though it is usually mistakenly perceived by society as being the opposite, wherein low-income groups suffering from poverty and lack of food are associated with underweight and malnutrition[13]. However, in developed countries the opposite seems to be true; low-income groups lack the resources to acquire healthy food and instead rely on cheaper, often highly processed foods, that contain high amounts of energy (mainly from sugar) and low amounts of essential vitamins and minerals. This reliance on cheap foods often results in overweight, obesity, micronutrient deficiency and other NCDs[14]. This paradox can be associated, among other circumstances and factors, with limiting financial resources which can influence and determine the dietary characterization. Unfortunately, cheap foods are extremely accessible but are usually characterized by being heavily processed with higher calorie content and less essential nutrients. In contrast, fresh, non-processed foods are less affordable and often less accessible[15]. As a result of this imbalance in accessibility, affordability and nutritional content, many individuals within the EU, especially those belonging to groups outlined above, are exposed to malnutrition (including overweight and obesity among other health problems) and nutrition insecurity.

Malnutrition is recognized as one of the most important problems of developing countries. In the context of nutrition insecurity, it is important to recognize that this term does not only describe an outcome of hunger circumstances. Actually malnutrition includes 3 main situations;: undernutrition, micronutrient-related malnutrition and overweight, obesity, and diet related NCDs (e.g. diabetes). The most well-known situation leading to malnutrition is undernutrition. Undernutrition characterizes the most prominent type of malnutrition in developing countries. In contrast, the other two instances of malnutrition, micronutrient deficiency and overweight and obesity, are less commonly seen as malnutrition statuses, yet are

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[12] A, Robertson., T, Lobstein., C, Knai (2007). *Obesity and socio-economic groups in Europe: Evidence review and implications for action* (pp. 8-10). European Commission. (hereafter 'Obesity and socioeconomic evidence review')

[13] Supra note 6

[14] Waters, E., Swinburn, B., Seidell, J., Uauy, R. , Supra note 4

[15] Żukiewicz-Sobczak, W., Wróblewska, P., Zwoliński, J., et al., Supra note 8

extremely important and mostly characterize developing countries[16]. Moreover, these two last forms of malnutrition can coexist simultaneously in one individual and/or in the same household[17]. Nutritional security may be defined as the accessibility of a population to the their basic nutritional requirements, related to the amount (undernourishment or well nourished) and quality (overweight and obesity). This is not a rigid definition, and must be defined for all age groups, genders and (to a lesser extent) ethnicity. The term nutrition insecurity is derived from the *food insecurity* concept, and points out that lack of food is not the problem in developed societies, but rather the quality of affordable food[18].

A reference to adequate food exist under Art.11 of the ICESCR: " 1. The States Parties to the present Covenant recognize **the right of everyone to an adequate standard of living** for himself and his family, including **adequate food**, clothing and housing, and to the continuous improvement of living conditions. The States Parties will take appropriate steps to ensure the realization of this right, recognizing to this effect the essential importance of international co-operation based on free consent.

2. The States Parties to the present Covenant, recognizing the fundamental right of everyone to be **free from hunger**, shall take, individually and through international co-operation, the measures, including specific programs, which are need..." (Art. 11 of the ICESCR). The right to food was further interpreted by the Committee of Economic, Social and Cultural Rights (CESCR) in the its General Comment No.12: The Right to Adequate Food[19].

The 'General Comment No.12, the Right to Adequate Food' outlines the broader meaning of the right to adequate food, which has three main characteristics. These three characteristics are dietary requirements, acceptability by culture, and safety. When focusing on the nutritional aspect (dietary requirements), the term "adequate"

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[16] Malnutrition. (2017). Fact sheet. Retrieved from http://www.who.int/mediacentre/factsheets/malnutrition/en/ (last accessed 23 November 2017)

[17] 1. Double burden of malnutrition. (2017). Nutrition programs. Retrieved from http://www.who.int/nutrition/double-burden-malnutrition/en/ (last accessed 22 October 2017)
2. Waters, E., Swinburn, B., Seidell, J., Uauy, R. , (pp.134) *Supra* note 4

[18] Malnutrition: It's about more than hunger. (2017). Media center. Retrieved from http://www.who.int/mediacentre/commentaries/malnutrition/en/ (last accessed 19 October 2017)

[19] The CESCR General Comment No.12: The Right to Adequate Food (Art.11), E/C. 12/1999/5. (hereafter 'General Comment No.12')

means that the diet should be suitable nutritionally to all target groups consuming the diet, while taking into account their age, gender, livelihood etc. The accessible nutrition should be suited to the physical and mental needs for growth and maintenance of each target group. Additionally, adequate food should be physically and economically accessible to all individuals, and should be available for purchase at the market by all individuals[20].

In Maslow's hierarchy pyramid of human needs, the lower level of the pyramid consists of the most basic physical and biological needs to survive, with food being one of those needs along with water, sleep, etc. According to the theory, with a lack of one or more of the basic pyramid needs, the existence and implementation of the top layers of the pyramids needs will not be executed, and the hierarchy will not be able to exist entirely. In other words, beyond the fact that food is literally a physiological need to exist corporeally, it also a need which enables spiritual needs. In fact, the same happens when implementing HR. How can political and civil HR be applied when humans do not have economic access to adequate food? How is it possible that the Right to Adequate Food does not exist in the EU human rights treaties, next to the right to education? As specific physical needs must be fulfilled before other needs can be fulfilled, so most basic HR. The fulfillment of certain HR can only exist when the most basic HR is recognized and accomplished, without them further HR would not be properly fulfilled[21]. As long as adequate food does not exist as a right in the EU legal framework, the HR hierarchy in the EU could be damaged.

It seems that the right to adequate food has been ignored in the EU in the context of child obesity and low socio-economic groups, since it is not mentioned in any of the EU standards and laws concerning human rights[22]. No reference exists regarding "the right to adequate food", not even in synonyms. Neither food nor nutrition are mentioned in the treaties of the council of the EU[23]; the European Convention on

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[20] General Comment No.12, *Supra* note 19

[21] Pol, J. L., & Schuftan, C. (2016). No right to food and nutrition in the SDGs: mistake or success? *BMJ Global Health,1*(1). doi:10.1136/bmjgh-2016-000040

[22] Hospes, O., Hadiprayitno, I. (2010). *Governing food security: law, politics, and the right to food.* (pp.91-94). Wageningen Academic Publishers.

[23] *Supra* note 17.1

Human Rights[24] and the Charter of Fundamental Rights of the European Union[25]. The combination of the above facts and data raises concerns about the EU role regarding nutrition insecurity along with child obesity at the low socioeconomic groups, and the legal function regarding "the right to food". The hypothesis of this thesis is that the absence of attention paid to the right to food affects the manner in which the EU deals with nutrition insecurity and child overweight and obesity issues within the EU. This led to the primary research question for this thesis:

How could the right to adequate food be (better) taken into account in European Union policies and law addressing the phenomenon of nutrition insecurity leading to child obesity in children from lower-income families?

This thesis project includes seven main sections. Sections 1-3 explain the thesis strategy and the research methodology. Section 4 describes the increasing child overweight and obesity phenomenon in the EU. Section 5 looks at the child overweight and obesity phenomenon along with nutrition insecurity and human rights, under law and in a legal framework. Section 6 describes what has been done so far under the EU, and what is planned to be done. Moreover this section will present an optional road map according to the existing EU policies. Section 7 concludes and summarizes the main ideas of the thesis.

2.1 Aim of the Thesis

The thesis is an original project which bridges two different disciplines: human rights law and public health. While writing my thesis I will endeavor to discover and clarify the legal framework of human rights in relation to nutrition insecurity and child overweight and obesity in the EU, by exploring the EU's role as a regulator and legislator in light of the increasingly problematic diet and nutritional insecurity phenomenon (alongside other factors). The research will first include a review of child obesity and overweight status alongside the diet and nutritional insecurity in the EU. Following that review, I will then analyze the absence of specific fundamental human rights standards regarding the right to food in EU law and policies; the effect

[24] The European Convention on Human Rights

[25] The Charter of Fundamental Rights of the European Union (2012/C 326/02). (hereafter 'CFREU')

of its absence on social and health issues, as well as what could be gained from its inclusion.

2.2 Theoretical and Methodological Approaches

In order to answer my question, as well as analyze and research the effects of the regulatory absence of the *Right to Adequate Food* in EU law, it is necessary to use doctrinal research, methodological approach and literature study. I will discuss and analyze existing Human Rights (HR) legal documents, both on an international and EU level, in order to evaluate and examine legislative gaps and differences between legal interpretation of both systems. First, I will analyze the existing data on food insecurity, child obesity in the EU; which groups in the EU are most affected, and how its link to HR. To complete this section, I will use literature and epidemiological research. This research phase will not be based on legal documents and theory, but will constitute the basis for the next theoretical approach.
To complete the research, the second approach will focus on the legal aspect from several points of view, such as the essence of the law (i.e. the meaning of human rights law as a fundamental and guidance law) and how HR law should be applied under the EU legal framework. I will refer to how the legal conversion process proceeds from international law to EU law. By understanding the legal theoretical framework, it will be possible to analyze the current regulatory absence, in order to find a suitable legal solution to the phenomenon of food insecurity and child obesity in low socioeconomic groups in the EU.

2.3 Specific Research Method and Source of Information

To answer the thesis research question, my research method will be based on the relevant HR treaties on both international and EU levels, as the International Covenant on Economic, Social and Cultural Rights (ICESCR), the Convention on the Rights of the Child (CRC) and the Charter of Fundamental Rights of the EU (CFREU), in order to identify and classify differences between standards. At a later stage, in order to examine the meaning of the effect and consequence of absence and/or differences in the law, I will base my research on scientific literature studies such as scientific articles, health reports and statistics on an EU and international level, as well as reviewing epidemiological and public health data.

3. Introduction to child obesity and overweight in the European Union

For many generations, extra weight was perceived as healthy and was an indication of one's wealth and status, and a measure of women's fertility[26]. Extra weight women were considered to be fertile and used to symbolized beauty and healthy femininity. This was reflected throughout various historical periods from ancient to modern times[27]. However, over time, the misconception of extra weight as being healthy was revealed by experts to be wrong. The term extra weight had been redefined as overweight and obese, and both were identified as the main causes of NCDs and a wide range of other health problems[28]. Overweight and obesity are a physiological condition in which fat accumulates in the adipose tissues but also in other organs (which are not designed to store fat), more than is needed for normal function of the human body. Over the years extra fat accumulation can lead to health risks, which may eventually develop into NCDs[29]. The next chapter will review the growing proportions of child overweight and obesity and OW in the EU, the social causes, and health consequences.

3.1 Prevalence of child obesity & overweight; supranational phenomenon or not

A new term, "globesity", was coined by the WHO in order to describe and emphasize the "extra-large" dimensions of this phenomenon. The new term is a combination of the words *global* and *obesity*[30]. The European region is considered to be a part of the globesity phenomenon, with epidemic rates of obesity and OW and with an extremely high record of NCDs[2]. When focusing on the EU, 9-12% deaths annually in the old EU MS (those who joined before 2004) and 16-20% deaths annually in new EU MS (those who joined after 2004) are linked to obesity and OW related diseases[31]. The globesity concept refers not only to adults but to children as well; during 2016 the

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[27] Bonafini, B. A., Pozzilli, P. (2010). *Body weight and beauty: the changing face of the ideal female body weight.* ,12(1), 62-65. doi:10.1111/j.1467-789x.2010.00754.x

[28] Obesity. (2017). Health Topics. Retrieved from http://www.who.int/topics/obesity/en/ (last accessed 6 November 2017)

[29] *Supra* note 4

[30] Controlling the global obesity epidemic. (2017). Nutrition program. Retrieved from http://www.who.int/nutrition/topics/obesity/en/. (last accessed 23 October 2017)

[31] WHO (2014). *Obesity and inequities. Guidance for addressing inequities in overweight and obesity.* Loring, B., Robertson, A.

WHO estimated about 41 million OW and obese children under the age of 5 worldwide [32]. In 2010, approximately every third child between the ages of 6-9 in the EU was classified as overweight or obese, whereas two years earlier in 2008, this was true for every fourth child[33]. Over the years, a rapid increase of child obesity and OW prevalence was observed in the EU MS, as can be seen in Figure 3.1. (see appendix) The increase has been observed widely at the EU level, from east to west and north to south.

The increasing prevalence of child overweight and obesity indicates a growing EU level phenomenon over the years. When examining the phenomenon geographically, as can be seen on Figures 3.1.1. and 3.1.2, a higher rate of child overweight and obesity can be seen in the EU Southern MS with over 30% of overweight or obese children in some countries, compared to less than 10% in Western MS countries[34]. Since overweight and obese children are more likely to become obese in adulthood[35], the current data could indicate an increasingly obese future EU society.

The increasing percentage of child overweight and obesity can be explained in several ways, most of which are associate and integrated with each other. This ranges from physical aspects e.g. genetic characterization, gender and age to social and economic influences such as marital, living and working status [25] However, the relationship between the north-south to overweight-obesity rise is not yet clear, while genetics do not seem to be the explanation since the gradient can even be seen in the same country[36]. The next subchapter will review the social and economic causes of the nutrition insecurity condition and its influence on child overweight and obesity inequality in the EU.

3.2 Obesity inequality and nutrition insecurity; social causes for child overweight and obesity

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[32] 1. Challenges. (2017). Nutrition programs. Retrieved from http://www.who.int/nutrition/challenges/en/ (last accessed 14 November 2017)
2. Malnutrition. (2017). Fact sheet. Retrieved from http://www.who.int/mediacentre/factsheets/malnutrition/en/ (last accessed 14 November 2017

[33] European Action plan 2015-2020. *Supra* note 2

[34] Ahrens, W., Pigeot, I., Pohlabeln, H. et al. (2014). *Prevalence of overweight and obesity in European children below the age of 10*. International Journal of Obesity,38(S2). doi:10.1038/ijo.2014.140

[35] European Action plan 2015-2020. *Supra* note 2

[36] Waters, E., Swinburn, B., Seidell, J., Uauy, R. (2010). (pp. 5). *Supra* note 4

Poverty in developed countries is assessed according to different terms than in developing countries. In developed countries, poverty is measured based on how much lower the living standards are than the accepted daily activities in that society. Poverty can also be evaluated based on total household income, which can indicate financial ability to pay bills, food, health care etc. In the case of households with limited financial resources, financial stress can be a limit to food accessibility, and lead to a food instability situation in the household. The instability can impact the availability of food, and change the food quantity and quality, which is required for healthy physical and mental child behavior and developed[37]. When food quantity and quality are insufficient, this can lead to nutrition insecurity.

Nutrition In/Security concept, often confused with the Food Security concept, was developed over the years according to society's needs. A new approach was needed, as the Food Security concept did not cover all nutrition aspects[38] that might occur in developed societies. Food Security[39] mainly refers to "freedom from hunger" and is based on food availability, access to food, utilization and stability. In other words, Food Security focuses more on cases of underweight and malnutrition resulting from hunger and lack of food[40]. While Nutrition In/Security refers to limited access and/or unstable availability of an adequate nutritional diet[41] and malnutrition where food is not lacking, but rather a low diversity of food and low quality of nutrition and an affordable and accessible diet in developing societies. Nutrition Security is based on access to adequate food, feeding practice and health[42]. In case of failure to implement one or more of the above elements, a situation of nutrition insecurity can occur, causing long term continuing effects on food consumption habits/ diet patterns, and lead to inequality overweight and obesity. As obesity inequality exists when overweight and obesity are expressed more in one specific group in society more than

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[37] Waters, E., Swinburn, B., Seidell, J., Uauy, R. (2010). (pp.129-130). Supra note 4

[38] Food and Nutrition Security (2013) UNSCN Meeting of the Minds Nutrition impact of food systems[PPT]. retrieved from https://www.unscn.org/files/Annual_Sessions/UNSCN_Meetings_2013/Wustefeld_Final_MoM_FNS_concept.pdf (last accessed 20 January 2018)

[39] Ibid. 'Food security' exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. based on FAO definition (1996, 2009)

[40] Supra note 31

[41] Waters, E., Swinburn, B., Seidell, J., Uauy, R. (2010). (pp. 129-131). *Supra* note 4

[42] *Supra* note 32.2

others due to the group characteristics and lifestyle habits. In developed societies such as the EU, obesity inequality is more commonly expressed in groups with lower social and/or economic vulnerability characterization such as gender, ethnicity, socioeconomic status, marital status etc.

Of the groups mentioned above, low socioeconomic groups appear to be approximately twice as exposed to overweight and obesity than any other group[25]. Nonetheless, the obesity percentage from low socioeconomic groups has increased much more rapidly than in the higher socioeconomic groups, which adds another dimension to the existing social and economic gaps in developed societies of the 21st century. While clearly childhood overweight and obesity rates clearly increase globally in all levels of society, the increase is the fastest among children from low socio-economic groups. In France, the lowest socioeconomic group had the highest obesity rates among all other income groups during 1997-2012. Using another example from France, the rates of child obesity have tripled over the years compared with two of the highest income groups (Fig. 3.2.1., see Appendix). Along the higher incidence of overweight and obesity which is commonly associated with lower socioeconomic groups, the problems are found in a higher risk group that suffer from NCDs throughout an overweight and obese life[43]. Another study indicates a link between low socioeconomic status and childhood obesity, comparing Canada and US to Norway. While the first two have less supportive social system policies compared to Norway, families from low socioeconomic and other vulnerable groups are negatively affected. Systematically higher rates of childhood obesity are observed in poor populations as opposed to more economically stable groups in Canada and US, while in Norway (with more developed and supportive social policies), this discrepancy was less apparent[44]. This study could be a reflection not only of the possible relationship between childhood obesity in the low socioeconomic groups in developed societies, but also of the power that exists in social policies which can assist (among other steps) in moderating the effect of nutrition insecurity on the childhood obesity epidemic in these groups.

[43] CFREU. *Supra* note 25
[44] *Supra* note 34

The vulnerability of low socioeconomic groups, putting them at greater risk of obesity and OW, is due to social gaps such as educational background, ethnicity, income status, health care availability, employment stability, single parent family etc. All of these affect lifestyle, diet patterns and access to healthy and nutritious food that may lead to overweight or obesity. Due to financial limitations, lower socioeconomic households are dealing with insufficient access to adequate and nutritional foods, in light of increasing prices worldwide for healthy food, compared to unhealthy food products[45]. Increasing food prices worldwide can be explained among other reasons by changes in food preference in the largest developing economies such as China, and because of the growing industrial use of crops such as maize[46]. Price changes impact the entire society, but mostly the lower socioeconomic families with children, who tend to buy food based on price and less on nutritional value. Cheaper foods usually contain empty calories (based mostly on carbohydrates and fats), than healthier, fresh foods such as fruit, vegetables, dairy and meat, which are more expensive[47]. As a result these children have a higher tendency to become overweight or obese, and may well suffer from lack of essential macro and micro nutrients.

Child overweight and obesity in the EU can be an indication of adulthood overweight and obesity rates in low socioeconomic groups. The higher the income inequality in a country, the higher the rate of child obesity[48]. Unlike adults, children are considered to be a uniquely vulnerable group. The exclusively diagnosis of children as a higher risk group than others, derives from the sensitivity that defines that group and considers the mental and physical limitations of childhood at different ages, taking into account appropriate needs (the preamble of the Convention on the Rights of the Child). Children cannot make decisions about the food they consume, since they have

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[45] 1. Ibid. The healthy and unhealthy food products were classified as "core" and "non-core" foods, while "core" refers to essential in nutritious diet, and "non-core" refer to not essential and nutritious poor. The criteria sets based on *the Australian Guide to Healthy Eating*, retrieved from http://www.health.gov.au/internet/publications/publishing.nsf/Content/nhsc-guidelines~aus-guide-healthy-eating

2. *Supra* note 34

[46] Burns, C., Sacks, G., Gold, L. (2008, October 08). *Longitudinal study of Consumer Price Index (CPI) trends in core and non-core foods in Australia*. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1753-6405.2008.00278.x/full

[47] CFREU. *Supra* note 25

[48] CFREU. *Supra* note 25

only partial perception of the long term effects of their consumption habits on their health[49]. Moreover, nutritional recommendations for children are based on their essential physiological growth. Addition information about children as a high-risk group will be provided in further detail in chapter 5.1.

3.3 Non-communicable disease prevalence and incidence

Non-communicable diseases (NCDs), known also as chronic diseases, include cardio-vascular diseases (such as stroke and heart attacks), certain types of cancers (endometrial/ kidney/ breast/ liver/ gastric and more[50]), type 2 diabetes, chronic respiratory diseases (such as asthma) and mental illness[51] (Fig. 3.3.1., see Appendix). Each year 60% of globally premature deaths worldwide occur as a result of NCDs. The European region, with higher rates of 86% of premature deaths[52], became the most affected WHO region with NCD related deaths[53] (Fig. 3.3.2., see Appendix). Overweight and obesity during childhood increases the risk of overweight and obesity in adulthood. However, it can also increase the risk of NCDs during childhood[54] (Fig. 3.3.3., see Appendix).

NCDs can be affected and increased by unhealthy lifestyle, with main health risk factors such as low consumption of fruit and vegetables, overweight and obesity, physical inactivity, high blood pressure, high cholesterol, alcohol and tobacco

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[49] What are the causes? (2017). Global Strategy on Diet, Physical Activity and Health. Retrieved from http://www.who.int/dietphysicalactivity/childhood_why/en/ (last accessed 11 September 2017)

[50] Obesity and Cancer (2018). National Cancer Institute. Retrieved from https://www.cancer.gov/about-cancer/causes-prevention/risk/obesity/obesity-fact-sheet (last accessed 5 January 2018)

[51] 1. Non communicable diseases (2017). Fact sheet. Retrieved from http://www.who.int/mediacentre/factsheets/fs355/en/ (last accessed 5 January 2018)

2. Noncommunicable diseases. Health topics, WHO European Health Region. Retrieved from http://www.euro.who.int/en/health-topics/noncommunicable-diseases/noncommunicable-diseases (last accessed 6 January 2018)

[52] Noncommunicable diseases. Health topics, WHO European Health Region. Retrieved from http://www.euro.who.int/en/health-topics/noncommunicable-diseases (last accessed 6 January 2018)

[53] European Public Health and Agriculture Consortium (EPHAC). *Towards a healthier, more sustainable CAP*. Retrieved from http://eurohealthnet.eu/sites/eurohealthnet.eu/files/publications/EPHAC-Position-Paper.pdf

[54] Waters, E., Swinburn, B., Seidell, J., Uauy, R. , (pp.8) *Supra* note 4)

consumption[55]. Unhealthy diet is considered to be the main health risk affecting NCDs frequency, due to its link to 5 out of the 7 risk factors mentioned above[56].

80% of NCD cases can be prevented by avoiding these health risks[57]. At present, prevention is done mainly by public health campaigns and education, and the influence on expected changes in food consumption patterns is slow to be implemented. However, experts claim that food choice and consumption patterns can be changed by making fresh food more available, accessible and affordable for more consumer groups. This might be essential in influencing food choices, and therefore in influencing unhealthy diet habits. If preventive measures do not occur, the WHO estimates an increase of 17% NCD rate worldwide during the next 10 years[58].

4. Addressing child obesity and nutrition security through the lens of human rights perspective

For the layman (those with no legal background), the existence and fulfillment of international human rights law in developed countries might be accepted as an axiom; an obvious binding law, which exists entirely and without any exception in western society. In fact, implementation of human rights under the legal framework is much more complex, even further in supranational spiking. At their very base, principle human rights are owned from birth by every human being. Though this is true in theory, in reality how are those rights actually enforced? How do individuals and groups gain access to them? How does the legal mechanism act? Human rights law has been designed at an international level, and created in the form of treaties or declarations. Treaties are a generic name for binding agreements made between state parties (the UN MS in this case). However, the law is officially enforced only under specific conditions and legal domestic steps (ratification), conforming its bindings and legal meaning into "hard law"[59].

In that case, why do these human rights treaties exist, if they are not automatically legally binding in the state parties (but first need to be ratified domestically)? Over the

[55] *Supra* note 39
[56] *Supra* note 32.2
[57] *Supra* note 32.2
[58] *Supra* note 32.2
[59] Ibid. Hard law: legally binding international law, at domestic level.

years, has international human rights law (e.g. CESCR) become more suited and relevant mainly for developing countries than for developed countries? As one of the (worldwide) communities involved in HR implementation in developing countries, does the Union have an ethical role to act at EU MS level, although HR treaties are not legally binding in the EU? Regarding child obesity, there are two relevant human rights treaties; the UN Convention of the Rights of the Child (CRC) and the ICESCR, which include the Right to Adequate Food and the Right to Health. The following chapter will deal with both of the treaties in order to deal with these questions, resolve the legal meaning of international human rights law in general, and specifically at the EU level.

4.1 High risk groups

High risk groups of low socioeconomic status can be categorized in many different sub-groups based on different features such as gender, age, ethnicity, geographical area, genetic tendency, education level, physical condition (disability, pregnancy), marital status (single mothers), etc. From a human rights perspective as well as from an epidemiological perspective, *children* are perceived to be a vulnerable group aside from those mentioned above. Their characterization and needs with regard to obesity rates requires different handling and attention.

4.1.1. High risk groups from a human rights perspective

According to international law, the definition of a child is a human being below the age of eighteen (Art.1 of the CRC). The same definition exists under the European Convention on Human Rights (ECHR). However, in EU law there is no a single and uniform definition of what a child is; the definition can differ from one document to another based on legal framework and context, as the defined age can vary from anywhere below the age of 15 to below the age of 21[60].

HR is not often used in the context of (child) obesity, however, lately the perception of the natural relationship between human rights and child obesity is seen in a new

[60] European Commission (2017) *EU acquis and policy documents on the rights of the child*. (2017, October).
available at
https://ec.europa.eu/info/sites/info/files/euacquisandpolicydocumentsontherightsofthechild_update.pdf

light, mainly from a prevention approach[61]. From a human rights perspective, children were recognized officially on an international level as a unique group, distinguishable from other societal groups since the Geneva Declaration of the Rights of the Child of 1924 was adopted by The League of Nations. The acknowledgement of children as an exclusive group, derives from the sensitivity that defines this group and considers the mental and physical maturity limitations and needs of childhood requiring different age- appropriate solutions (the preamble of the Convention on the Rights of the Child). However, it is important to understand that children are viewed as rights holders, and not only as a group with unique protection issues and characteristics[62]. As opposed to adults, childrens' immaturity affects their rational decision-making concerning the food they consume in the context of the advantage and disadvantage of their nutritional needs for physically and mentally appropriate development. Moreover, the perception of morbidity regarding long term effects of their consumption habits is limited[63]. Although children were already acknowledged as a sensitive group in 1924, until the Declaration of the Rights of the Child 1959 was adopted, adequate nutritious food was not mentioned specifically in the child rights framework. However, the framework of adequate nutrition was extended through the years, and "new" requirements of nutrition (insecurity) have been acknowledged and adopted in the declarations of the Rights of Child. In the Convention on the Rights of the Child 1989, nutrition (insecurity) is mentioned both under Art.24 (indirectly) and Art. 27. Under Art. 24 (2.c.), state parties shall combat malnutrition to guaranty the highest health standard, and in (2.e.) it is noted that a basic knowledge of nutrition should be accessible to all levels of society, especially to parents and children (Fig. 4.1.1., see Appendix). Art. 27 notes that state parties need to provide material assistance and support programs mainly regarding nutrition, in order to guarantee adequate living standards (Fig. 4.2.2.1., see Appendix). The changes and additions made in the context of nutrition (insecurity) through the years in the above HR treaties, may result from the various social and health necessities, according to the growth and development of food markets, migration, interests, awareness, new policies over time, etc.

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[61] Waters, E., Swinburn, B., Seidell, J., Uauy, R. , (pp.44). *Supra* note 4

[62] *Supra* note 45.1

[63] *Supra* note 38

The only references to food in the Geneva Declaration of the Rights of the Child 1924 were extreme cases involving hunger, sickness and being orphaned (2nd principle of the Geneva Declaration of the Rights of the Child 1924). In earlier times, Geneva Declaration of the Rights of the Child 1924 was designed for the post World War I era, as Europe suffered the consequences of the war at all levels (social, health, political and economic). In present times the Convention on the Rights of the Child 1989 and similar treaties seem to be concerned mainly in the context of developing countries and conflicted areas. In the Declaration of the Rights of the Child 1959, Principle 2 notes the importance of 'physical development' of the child, which in general term of the concept of physical development may have included adequate food in the legal interpretation (but does not directly appear in the treaty). However, when continuing to Principle 4 of the Declaration of the Rights of the Child 1959, the right to adequate nutrition was specifically included, regarding a safe and secure social environment for children under the entitlement to grow in a healthy manner with the right to adequate nutrition. Following the 1959 declaration, in the Convention on the Rights of the Child 1989, nutrition (insecurity) was noted both under Art.24 (indirectly) and Art. 27. States' responsibilities and role were first mentioned (Art. 24.1 of the Convention on the Rights of the Child 1989). Moreover, a detailed description has been included concerning the cases in which states shall act in order to prevent and reduce cases of disease and malnutrition (overweight and obesity according to the WHO, considered to be part of the malnutrition broad groups), by providing adequate nutrition (Art. 24.2.c) along with basic knowledge of nutrition that should be accessible to all levels of society, especially to parents and children (Art.24.2.e) (Fig. 4.1.1., see Appendix). In Art. 27 of the Convention on the Rights of the Child 1989 it was noted that state parties need to provide material assistance and support programs mainly regarding nutrition, in order to guarantee adequate living standards (Fig. 4.2.2.1., see Appendix).

The Union and all of the EU MS are required to respect, protect and fulfill the rights of children as defined under the Convention on the Rights of the Child 1989[64]. However, the Right to Adequate Food is lacking in the EU core document concerning

[64] Rights of the child- EU action on the rights of child. Retrieved from http://ec.europa.eu/justice/fundamental-rights/rights-child/index_en.htm (last accessed 5 February 2018)

human rights (the Charter of Fundamental Rights of the European Union 200/C 364/01). The existence of a legal framework approach makes it much easier to reach the most vulnerable groups in society. In the context of rights from a child's perspective it has been speculated that in order to address the child obesity epidemic issue, it should be viewed not as a public health matter, but anchored under the Convention on the Rights of the Child[65].

4.1.2. High risk groups from an epidemiology perspective

Epidemiologically, according to World Health Organization (WHO), childhood obesity is considered to be one the greatest public health issues of the last century[4]. Childhood obesity and overweight issues are highly prevalent worldwide. Looking at these high rates in a broad perspective of the near future, it is necessary to take into account the fact that children suffering from obesity and overweight at a young age are at greater risk of remaining overweight and obese during their adult lives[4]. They will also be at greater risk of suffering from NCDs, more so than adults who become overweight and obese later in life. Therefore the current high rate of child obesity is expected to affect adult NCD rates in the coming years along with the increased need for pediatric treatment[66]. Given the circumstances, focusing on children as a high risk group can be a preventative measure to reduce illness in society rather than a treatment or cure (which is no longer suitable to the existing epidemic status)[67]. Along with the effects on morbidity and mortality NCD rates in adults in the future, health care costs can also be affected and cut down[68].

4.2 Actors legal essence of international Human Rights law framework

In theory, HR laws were established as the minimum fundamentals needed for a person to live. They should exist everywhere at all times[69], above the political, economic and cultural system, in order to guaranty equality fulfillment,

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[65] Waters, E., Swinburn, B., Seidell, J., Uauy, R. (2010). (pp.41). *Supra* note 4

[66] Waters, E., Swinburn, B., Seidell, J., Uauy, R. (2010). (pp.3-8). *Supra* note 4

[67] Waters, E., Swinburn, B., Seidell, J., Uauy, R. (2010). (pp.12). *Supra* note 4

[68] Waters, E., Swinburn, B., Seidell, J., Uauy, R. (2010). (pp.71). *Supra* note 4

[69] Carey, C.S., Gibney, M., Poe, C. S. (2010) *The Politics of Human Rights: The Quest for Dignity* (pp.11). Cambridge University Press.

internationally and domestically[70]. International HR laws were created under the UN and its diverse derivative bodies. Since the UN is an international character organization, the legal meaning of the UN treaties are expressed and regulated differently than the domestic legal system, therefore raising questions of how legally operative it can be under this international legal framework, when applied at the domestic level.

The next subchapter will clarify the legal essence of the international HR legal mechanism, as well as how HR law became binding for the state parties, and lastly the different legal meaning for states and non-state actors when applying international HR law.

4.2.1. Legal perspective - the legal framework of international HR law

HR law is meant to be used as core fundamentals for other international and domestic law and policies. International HR law was developed in order to guarantee international homogenous and protective standards, for individuals as well as groups[71]. Universal Declaration of Human Rights and international human rights treaties indicate the common universal approach and perceptions regarding recognition of HR importance, as they were created by the UN MS for the UN MS, and in theory should be inherent to every person just by being a human, and cannot be "given" or "taken" for the simple reason that in theory they are innate factors[72]. However, in reality this depends on domestic ratification and implementation[73]. The international HR law system is based on standards and law called "soft law" or "hard law", according to their binding force meaning. "Soft law" usually appears in HR non-treaty documents (such as declarations), and as their name implies they are not binding, but rather used only as guideline principles[74]. Treaties however have legal

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[70] WHO (2002). *25 Questions & Answers Health & Human Rights 25 Questions & Answers Health & Human Rights, Health & Human Rights Publication Series Issue No.1*. Available at http://www.who.int/hhr/NEW37871OMSOK.pdf

[71] *Supra* note 52

[72] *Supra* note 52

[73] The Foundation of International Human Rights Law. (n.d.). Retrieved from http://www.un.org/en/sections/universal-declaration/foundation-international-human-rights-law/index.html (last accessed 18 February 2018)

[74] What is the difference between IHL and human rights law? (2015). International Committee of the Red Cross. Retrieved from https://www.icrc.org/en/document/what-difference-between-ihl-and-human-rights-law (last accessed 15 February 2018)

meaning which enables conversion into binding law and create obligations[75]. International HR treaties are developed and created under a cooperative system, performed by the state parties. Therefore, as HR treaties are created by states parties, they are legally binding only at a state level, while non-state actors are not legally binding to those legal protocols[76].

When developing an HR treaty, the involved parties includes the UN states, while each state government can decide without any obligation whether or not to be a party to the treaties[77]. Becoming party to a treaty is the state's first step to declaring a commitment in order to act accordingly to the treaty. Though, a party state sense does not make it legally binding at a domestic level, yet in order to become binding and obligatory for the state party, ratification must be done at a domestic level. Only when a state party government ratifies the HR treaties and begins steps toward national recognition by transferring the international standards into their domestic legal system, it becomes officially binding for that state party[78]. In other words, without a state's ratification it does not matter if a state signs the treaty or a UN state party. This depends on further binding steps, the bottom line being that without ratification no binding enforcing steps can be taken.

4.2.2. The European Union Human Rights system- responsibilities and obligation

The European children's rights law is covered by two legal systems: national and international. The EU legal system is based on ECHR (regulated under the Council of Europe) which is based on the CRC (regulated under the UN). Part of the EU legal system overlaps with the European HR system (ECHR), and part of it does not. However from the Union perspective, EU MS are required to be subject to the European legal system, as they are subject to the EU legal system[79]. In the context of the EU HR system at an EU level, all of the EU MS and EU institutions are bound to

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[75] Waters, E., Swinburn, B., Seidell, J., Uauy, R. , (pp.8) *Supra* note 4)

[76] Waters, E., Swinburn, B., Seidell, J., Uauy, R. , (pp.8) *Supra* note 4)

[77] *Supra* note 52

[78] *Supra* note 52

[79] European Union Agency for Fundamental Rights (2015). *Handbook on European law relating to the rights of the child*. (pp.13-12). Publications Office of the European Union. Available at file:///C:/Users/nati%20first/Downloads/fra-ecthr-2015-handbook-european-law-rights-of-the-child_en.pdf.

promote, fulfill and protect the rights of children in all EU related policies. Moreover, since all of the EU MS ratified the CRC individually at a national level, in theory there should be no reason for any conflict between MS and/or with the supranational and/or with international level regarding children's rights law. As for EU authorities, each MS should implement and apply the right to adequate food from a national perspective strategy. Compared with earlier EU childrens' rights law, the current law is based on three main EU documents pillars in order to harmonize HR with the existing EU essence[80]: the Charter of Fundamental Rights of the EU (introduction), the Treaty of Lisbon (2009) and two EU guidelines documents: the European Commission Communication on a special place for children in EU external action and the Council EU Guidelines for the promotion and protection of the rights of the child. The Charter of Fundamental Rights of the EU was the first EU HR document to contain any reference to childrens' rights at an EU level. As for the second pillar document which is actually not a HR document but was the first EU document that legally outlined the need of child rights protection as an aim, and made the Charter of Fundamental Rights of the EU binding for the EU (Art. 6 of the Treaty of Lisbon). The last pillar is based on two HR guideline documents adopted by the Council of the EU, and addresses childrens' rights in case of external actions and additional rights protections[81].

International HR law legally binds only states; treaties cannot be legally applied in the EU. In other words, the EU cannot commit to international HR treaties as a political and economic union and become a party of the CRC[82]. Thus, from an international perspective, the EU cannot be viewed and treated as any other state party regarding legal commitment, since the EU does not break any law. However, the EU does have its own HR system. The Union HR system is based on an EU approach level and a documents system. Nonetheless, the EU system is based on the fact that all EU MS sign and commit to the European Convention on HR (ECHR), which is an international HR treaty. Therefore, HR law in European states can be viewed from three different perspectives: first from an international community and European

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[80] *Supra* note 79. (pp.20-22)
[81] *Supra* note 79. (pp.20-22)
[82] Waters, E., Swinburn, B., Seidell, J., Uauy, R. , (pp.8) *Supra* note 4

community (the European Region) perspective for each state as an individual, and from the EU (community) perspective.

Focusing on HR law from the EU perspective, the document specifically refers to children rights, leading to the EU acquis and policy documents on the rights of the child[83]. That document clarifies that all EU MS are bound to respect and fully comply with the Charter of Fundamental Rights of the EU, but only when applied under EU legal scope such as regulations, directives and decisions. This applies to all public national authorities (legislative, executive and judicial) while domestic courts have the legal power and responsibility to enforce it domestically under the guidance of the Court of Justice. In any case of HR law not included or addressed under Charter of Fundamental Rights of the EU, and/or in a case of law that does not relate to the scope of EU law, enforcement and implementation of HR are subject to the national authorities' decision and supervision. Moreover, all of the EU MS are committed individually to the European Convention of Human Rights (ECHR), regardless of the EU HR legal commitment.[84].

4.2.2.1. Mandatory vs. voluntary legislative acts related to economic and social rights

HR law were not only designed to care for the people, they were actually intended to create and provide a legal system to allow conditions for people to be able to care for themselves[85]. It is important to realize that HR has legal validity internationally and nationally, and states have a legal duty to protect and implement them. Yet the complexity of understanding that HR has legal validity lies in the gaps between the written HR law and the existing reality, such as nutrition security and child obesity in the EU[86].

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[83] 1. Ibid. An EU document that merge and unite all the relevant guidelines, legislation, policies etc., which related on the rights of child in EU level.
2. *Supra* note 60

[85] Carey, C.S., Gibney, M., Poe, C. S. (2010). (pp.11) Supra note 69

[86] Carey, C.S., Gibney, M., Poe, C. S. (2010). (pp.12) Supra note 69

The Union general legislative authorities' responsibility is detailed in the Treaty of the Functioning of the EU (TFEU) Art.2-4, and includes areas exclusively under the Union legal competence (Art. 3 of the TFEU), as well as those which are shared competence between the Union and the MS government (Art.4 of the TFEU). When under the exclusive competence, only the Union can adopt and legislate the legal acts, while the MS bind to implement (Art.2.1 of the TFEU). In case of a shared competence, the MS may use their legislative authority only if the Union did not implement its competence and/or in case the Union has decided not to implement its legislative competence (Art.2.2 of the TFEU). In cases where the Union decides not to exercise legal authority and the MS (all or part of them) exercise their authority, legislation will probably differ in each MS regarding that area. However, according to Art.2-4 of the TFEU, child obesity issue and HR (the Right to Adequate Food) are both areas that can be covered by several fields (Art.4.2 of the TFEU) under the Union and MS as a **shared competence**, such as policies which deal with public health, social, economic, consumer protection, environment, agriculture etc. HR law not mentioned as shared or exclusive competence are usually done based on individual cases at an EU level [87]. Therefore, addressing the phenomenon of nutrition insecurity that leads to child obesity in children from lower-income families through HR legal system (by the right to adequate food) at EU level, may be a challenging process. This is mainly because of the shared competence possibility, which could create a situation in which neither the Union nor some or all of the MS won't take any legislative action, in which case legislation may not be created, and falls between the cracks. However, neither the Union nor the MS violate any law by doing so, under the TFEU[88].

Although the EU (supposedly) does not officially violate any HR law, in that there is no legal validity at EU level for the right to adequate food, the lack of basic HR in the CFREU clearly indicates that HR law is not implemented as it should be. This does not mean that the EU does not have an ethical obligation to implement the right to adequate food in order to eliminate existing nutrition insecurity that causes child obesity in low socioeconomic families. Even though the EU has no legal obligation to

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[87] *Supra* note 79

[88] Ibid. Since I cannot verify if in each of the MS there is a national legislation that deals with the Right to Adequate Food with an emphasis on children, I will continue to refer to legislation at the EU level only.

legislate regarding this right, they have an ethical obligation to EU citizens, especially to vulnerable groups. The missing HR legislation in developed countries is described by Makau Mutua as the 'western hypocrisy'. The western hypocrisy is expressed in obsessive policy-making regarding HR in developing countries, while ignoring the fulfillment and protection of some HR in their own countries[89]. Mutua gave as an example the discriminatory attitude against women in developed countries, while at the same time the discriminative countries protest discrimination against women in developing countries[90]. It might be perceived as an extreme theory, when it is not really possible to compare HR violations in developing countries to developed countries. Mutua's theory is expressed in the EU, whereas the EU can be very involved in international acts regarding rights, and have policies for children's nutrition insecurity in developing countries, but hardly act within the EU framework, as the Union does not hold any officially regulation and/or policy for the EU children regarding nutrition insecurity[91]. Mutua's criticism emphasizes the paradox of Western countries in implementing HR simultaneously in developed and developing countries. The HR involvement of developed countries in developing countries is essential and necessary. Without that involvement HR existence would be in doubt in developing countries, where it is a global challenge and responsibility. Yet, involvement in developing countries should be without any contradiction to the implementation of HR first and foremost in the Western countries themselves.

At present the EU finds itself at an ethical, social, economic and health crossroad as a community. Whether to continue as a HR-friendly and for the first time consider the Right to Adequate Food into their supranational jurisdiction framework; first to the CFREU and then to develop it as a binding legal framework (regulation or directive), while on the other hand not developing any legal and policy action in the current situation. Inaction by the Union on the enactment of the Right to Adequate Food at an EU level would be perceived as equivalent to the US act, which does not consider food as a HR at all[92]. Given the fact that all the EU MS are parties to the CRC and the

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[89] Carey, C.S., Gibney, M., Poe, C. S. (2010). (pp.24-27) Supra note 69
[90] Carey, C.S., Gibney, M., Poe, C. S. (2010). (pp.24-27) Supra note 69
[91] *Supra* note 21
[92] *Supra* note 21

ICESCR, and have ratified both of the treaties[93], the Union has a strong political case to implement and establish them at EU level. In practice the basis for a new legal approach and/or a policy in EU level exists, as the Union has the data, ability, resources. Above all is the fact that all the MS have ratified the CRC and the ICESCR on a national level which makes it easier to act further, and adopt and promote a new legal approach at EU level with regard to nutrition insecurity and child obesity in the low socioeconomic groups.

4.3 Human Rights and the link to health

When linking HR and health, a bilateral relationship exists which can have both negative and positive effects. On one hand any violations and/or absence of HR can lead to the creation of health issues or even worsen existing ones. On the other hand, prevention of health issues and even a reduction of the prevalence can be achieved by creating health and social policies and/or laws designed from HR perspective[94]. HR existence can guarantee fulfillment of codes and principles of what should and should not be done[95]. As appeared in Art.11 of the ICESCR and in Art.27.3 of the Convention on the Rights of the Child (CRC). In both of the HR articles, a reference is made to the states parties responsibilities, which can ensure that a domestic involvement can support citizens health.

In other words, implemented HR treaties do not only need to be instruments in order to guarantee basic life standards and to avoid inequality in society, but can also help to reduce and prevent health issues. An example for improving health issues from an HR perspective can be represented by food subsidies. Consumption of an unhealthy diet[96], usually by low socioeconomic groups and leading to overweight and obesity, can be changed and improved. By creating a subsidized EU law (regulation or directive) for basic food products (mainly agriculture products), a healthy, nutritional and essential diet can be more accessible for high risk groups. Such a step might

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[93] Status of Treaties, The ICESCR signature and ratification list. Retrieved from https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=IV-3&chapter=4&lang=en (last accessed 15 March 2018)
[94] *Supra* note 52
[95] Carey, C.S., Gibney, M., Poe, C. S. (2010). (pp.8) Supra note 69
[96] Ibid. Diet which based on cheaper and more accessible food product, and usually contain empty calories, high fat and lower in essential micro and macro nutrients.

reduce consumption of an unhealthy diet over time, and by other measures as well, affect the child obesity rates in low socioeconomic groups.

The yellow marked lines in Fig.4.2.2.1. and 4.2.2.2. (see Appendix), refer to the expected responsibilities of states parties as written regarding the Right to Adequate Food promotion and implementation acts. Therefore it can be said that any absence and/or violation of those responsibilities can lead to a lack of basic adequate standards of living, and cause health issues to high risk groups (e.g. the existence of nutrition insecurity in low socioeconomic groups in EU that leads to consumption of unhealthy diet that can cause to child obesity).

4.4 The Right to (Adequate) Food as a human right

In order to better understand the legal context of the right to food it is necessary to understand how it is officially defined under the ICESCR. The right to adequate food can be found under Art. 11 of the ICESCR as 'adequate food' (Art.11.1) and 'free from hunger'(Art.11.2). While the second is perceived as a fundamental human right mainly during extreme and unconventional conditions, the first is deemed one of the basic living standards which is also needed to enable the fulfillment of living standard rights (such as clothing and housing). The meaning of the right to adequate food is not detailed further in Art. 11, but described and interpreted by the Committee of Economic, Social and Cultural Rights (CESCR) in the CESCR General Comment No.12: The Right to Adequate Food. The right to adequate food was written under international legal framework, which works in a completely different light than national or supranational law as detailed in the previous chapters. With a different legal system, enforcement of implementation might be carried out unlike a national legal system[97]. In fact, the meaning of the international community's acknowledgement of the right to food as one of the human rights basic living standards in UN treaties, makes it the very first and basic food law that to appear at an international legal level[98].

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[97] Klabbers, J. (2013) *International law* (3-19). Cambridge University Press

[98] Meulen, B. V. (2014). *EU food law handbook*. (pp.86) Wageningen Academic Publishers.

According to the CESCR General Comment No.12 - The Right to Adequate Food definition - the broader meaning of The Right to Adequate Food deals with three main characteristics which are dietary requirements, acceptability by culture, and safety. When focusing on the nutritional aspect (dietary requirements), the term "adequate" means the diet should be suitable nutritionally for those who consume it. In other words, the necessary micro (minerals and vitamins) and macro (protein, carbohydrate and fats) nutrients should be part of all target groups consuming the diet, while taking into account their age (status in life cycle), gender, livelihood etc. The physical and mental needs for growth and maintenance of each target group should also be considered. Additionally, adequate food should be physically and economically accessible to all individuals, and should be available for purchase at the market by all individuals. Availability means that adequately food should be available at market and stores all year, and economically accessibility refers to financial ability to purchase foods that requirements for adequate nutritious at all times. This does not refers to luxury goods, but to basic food products such as vegetables, fruits, meat, milk, eggs, mainly agriculture products. While adequate food is not lacking in the EU, economic accessibility to adequate food is indeed a problem for certain social groups.

5. policy making and legal measures at EU level reagrd nutrition insecurity and childhood overweight and obesity- What has been done to date

Though there is no specific official recognition regarding the right to adequate food at EU level, neither in legally form nor in policy, the phnomenon of overweight and obesity among children (0-18), and the link to low socioeconomic groups in the EU is well known. In 2014, the EU created a six year action plan that concerning childhood obesity phenomenon. However, there are two important points to consider, which might indicate about the Union perception dimensions and causes of the phenomenon. First, despite the fact that the action plan was created at EU level, it is at a recommendation level only, meaning it is voluntary. Therefore, any implementation (complete, partial or if at all) of the action plan is according to the MS' decision only. Second, although it is noted in the action plan that healthy diet is one of the important factors in overweight and obesity prevention and maintainance of a healthy lifstyle, there is no mention of the right to adequate food in the entire action plan document. I have still chosen to refer to the action plan although there are additional documents, since this is the most relevant document at EU level in terms of its focus on children

overweight and obesity phenomenon. In addition to the action plan I will focus on the relevant EU Regulations concerning the legal framewotk when MS implement the School Fruits, Vegetables and Milk Scheme from the action plan.

The next chapter will review on of the existing EU work on child overweight and obesity, what has been done by the Union and how the right to adequate food can be applied in this context through the EU Action Plan on Childhood Obesity 2014-2020 document and the next reguations: 1370/2013, 2016/791, 2016/795 and 2017/40.

5.1 The EU Action Plan on Childhood Obesity 2014-2020

In February 2014 the Union published an Action Plan on Childhood Obesity for the years 2014-2020. The action plan was created at EU level, in light of the alarming highly prevalence and frequency of overweight and obesity in the EU. Though overweight and obesity are known throughout the entire age spectrum among the EU population, the Union has targeted overweight and obesity among children and young people as the most worrying problem which requires immediate action. The Union fears and concerns are derived from the fact that children are still young, and if the growing rate of children's overweight and obese is not addressed soon, it could pose a threat to the healthcare system in the near future and negatively affect the quality of health and life[99]. Therefore, the action plan was created in order to moderate the annual growth of overweight and obesity phenomenon among children and young people (aged 0-18) in the EU, within the period of 2014-2020. The action plan's guiding principle at the time of document writing was that in order to achieve the action plan goal, it is essential to join forces among a variety of stakeholders from different fields and work in cooperation. The Union cooperation approach; that in order to find and implement an appropriate comprehensive and long-term solution, an integration of extensive professional knowledge is required, is an important and critical point in understanding the children overweight and obesity issue in depth. Children overweight and obesity phenomenon is an issue that needs to be addressed and solved in multiple areas in order to effect change[100]. Among the different stakeholders, the lead actors are the EU MS, the European Commission and

[99] European Commission (2014). *The EU Action Plan on Childhood Obesity* 2014-2020. (hereafter 'Action plan 2014-2020')
[100] Action plan 2014-2020. *Supra* note 99

international organizations such as NGOs etc. However, according to the action plan, the responsibility for carrying out the plan lies first and foremost with the MS themselves for two reasons. Firstly, as mentioned above, the action plan is completely voluntary and every step beyond the action plan document in order to implement the action (or part of it if at all) will be decided on at a national level in each MS. Moreover the MS can choose to adjust the adopted part to the existing domestic policies and law. Secondly, national health policies are defined under the exclusively responsibility of MS domestic competence[101]. The action plan set forth eight priority areas whose aim was to guide the various stakeholders (which will be mentioned in the next paragraph). During the action plan writing, the Union identified the most influential factors and lifestyle habits that impact obesity and overweight prevalence among the EU population. According to the action plan a lifestyle that includes consuming a poor diet and lack of physical activity were found to have a significant impact on overweight, obesity and NCDs (the NCD can also be caused regardless of overweight and obesity from these factors).

The following are the eight priority areas of action on which the action plan was based:

- Support a healthy start in life
- Promote healthier environments, especially in schools and pre-schools
- Make the healthy option the easier option
- Restrict marketing and advertising children
- Inform and empower families
- Encourage physical activity
- Monitor and evaluate
- Increase research

Each area details the purpose of the action, the action, responsible body, achievement indicators, method of data collection and analysis, time to achieve the goal and a defined final goal. Each action detailed in the eight areas of action can be considered as recommendations and/or ways of coping, offered to the MS in order to combat child overweight and obesity.

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[101] Action plan 2014-2020. *Supra* note 99

5.2 The main areas of actions from the action plan that are relevant to my research

- Support a healthy start in life

Two factors that have a primary effect on future childhood obesity are related to the mother's pre-pregnancy weight and the weight gained during pregnancy, and breastfeeding. Therefore it is important to take into account the mother's nutrition before and during pregnancy, and whether the baby was breastfed as an integral part of preventing child obesity. Under this area the main related recommend actions are: support, promote and encourage breastfeeding as the best option for both mother and baby; develop programs that support a healthy lifestyle and body weight for mothers before and during pregnancy, by appropriate diet and physical activity, focusing low socioeconomic groups; developing a guideline for new-borns' complementary foods and feeding; cooking activities for low socioeconomic families; promoting and encouraging fruit and vegetable consumption.

- Promote healthier environments, especially in schools and pre-schools

Since children spend most of the day in educational frameworks, it is important to make these healthy environments. Therefore, under this area the main related recommend actions are: **create a framework for schools and pre-schools, and within the framework provide healthy meals based on the EU fruits, vegetables and milk scheme. The program aims to promote healthy eating habits and increase the consumption of fruits and vegetables at home through the educational framework, and is funded under the Common Agriculture Policy (CAP)** (detailed further in Chapter 6.2); free access to drinking water, limit access to vending machines, nutrition and healthy lifestyle activities during school time by trained educational staff, developing pilot programs to promote fruits and vegetables consumption in low socioeconomic groups (this pilot project will be further detailed in subchapter 6.2).

- Make the healthy option the easier option

The economic and social changes occurring in the recent decades have impacted consumption habits and the existing food supply. According to the OECD, daily fruit

and vegetable consumption in most of the MS is below the WHO recommendation.[102] To this day, the more accessible food (cheaper) is also the less healthy food. Creating an environment in which the healthier options are the more affordable ones can increase demand and consumption of healthy diet, and prevent inequality in food access. Therefore, under this area the main related recommended actions are: make the information on food packaging more legible and accessible for consumers, promote regulations for healthy food labeling and for nutrition and health claims, encourage food and beverage producers to implement and follow nutritional and health recommendations, and improve their food products; when determining food taxation and support policies, the nutritional value of the food product should be taken into account.

- Restrict marketing and advertising to children

Since studies show that a link exists between child obesity and TV, not only because the lack of physical activity or the eating patterns during viewing, but also because of exposure to food advertisements and marketing while watching TV. Therefore, children are considered a sensitive target group, and advertising and marketing should be adapted and limited to childrens' understanding and analytical abilities. Marketing and advertising should be monitored in the context of childrens' exposure. Under this area the main related recommend actions are: develop marketing and advertising restrictions for energy-dense foods for children, by the food companies; define nutritional criteria that can be used in food marketing for children, recruit and encourage media services in order to make the restriction more effective; The EU Pledge initiative, a voluntary program implemented by international food and beverage companies, in order to adapt marketing and advertising for children (in support of the World Federation of Advertisers)[103].

- Inform and empower families

Among the factors contributing to child obesity, there is a link between weight and eating habits of parents to those of their children. Parents are supposed to create a safe and healthy environment for their children as natural guardians and therefore they

[102] Action plan 2014-2020. *Supra* note 99
[103] Ibid. The EU Pledge initiative. Available at http://www.eu-pledge.eu/

play an important role in creating a healthy framework at home. By educating and guiding parents to make healthy choices for a healthy lifestyle, parents can create habits within the family that will affect the children, as children imitate their parents. Under this area the main related recommend actions are: provide parents with tools for healthy and affordable cooking such as cooking methods, recipes, portion size etc., through cooking classes in communities, phone apps, websites , provide information on the importance of exercise, encourage family activities such as family meals and physical activities (outdoor traveling), improve nutritional labeling under both Regulation (EC) No. 1924/2006 on nutrition and health claims and Regulation (EU) No 1169/2011 on food information to consumers, and educate and encourage consumers to read them; promote initiatives to purchase fruits and vegetables directly from the farmers; develop pilot programs under EU Commission responsibility to promote healthy diet and increase vegetable and fruit consumption especially in low socioeconomic groups; provide nutritional guidance for health experts who work with children from low socioeconomic families.

- Encourage physical activity

Physical activity is known to reduce risk of NCDs, and combined with healthy diet may prevent obesity. It is recommended to start as early as possible, while adapting to the abilities of each age. Under this area the main related recommended actions are: improving and adapting the urban environment to safe physical activity such as cycling paths, walking paths, parks and playgrounds appropriate for all ages throughout the city; commit to support the European Health Enhancing Physical Activity (HEPA) project[104] which supports promoting physical activity lifestyle, research, policy and guidelines; in addition to HEPA, develop a domestic physical activity guideline; physical activity facilities for free use in the community.

- Monitor and evaluate

The purpose of monitoring is to evaluate impact and results of the actions taken in order to prevent childhood obesity and promote healthy lifestyle from an early age.

[104] HEPA Europe (European network for the promotion of health-enhancing physical activity). (n.d.) Health Activities. Retrieved from http://www.euro.who.int/en/health-topics/disease-prevention/physical-activity/activities/hepa-europe (last accessed 17 March 2018)

Using the evaluation tool, the European Commission can monitor which actions have achieved their goals and contributed to prevention, and which less or not at all. Furthermore it can assess how to improve in future and where to place additional focus. Data collection during monitoring may contribute to development of new areas of actions. Monitoring and evaluation of the action plan will be carried out by several bodies at different levels. The main body will be the High Level Group on Nutrition and Physical Activity which consists of government representatives from the MS, and is headed by the EU Commission. Among other roles of the high level group, they share domestic health analysis, policies, a developed common approach and much more[105]. During monitoring and evaluation, differences between the MS will take all of this into account. Some actions will be more appropriate and contribute more to one MS, while in another MS it will be less effective. It is important to take into account the MS differences in culture, child overweight and obesity from a low socioeconomic group phenomenon scope, and the budget that MS government is allotted for implementation of the action plan. In order to maximize analysis and evaluation of the action plan in each action the responsible party is defined as well as indicators, data collection and assessment mechanism, time required to achieve the goal and the final target to be achieved. Monitoring of the evaluation of the action plan will start at the end of 2020. Under this area the main related recommended actions are: developing a national information system for food (food nutritional quality, food consumption habits) and physical activity (ages, socioeconomic group); gather more information for the WHO European Childhood Obesity Surveillance Initiative (COSI), the first official report on a European regional level which collects data and analyzes it in order to understand the development of childhood overweight and obesity phenomenon in the region[106]. In addition, support other MS to join and share data; establish a national database identical to COSI and formulate at EU level a uniform monitoring system on school nutrition.

- Increase research

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[105] High Level Group on Nutrition and Physical activity (n.d.). Retrieved from https://ec.europa.eu/health/nutrition_physical_activity/high_level_group_en (last accessed 17 March 2018)

[106] WHO (2010) WHO European Childhood Obesity Surveillance Initiative. Avialeble at http://www.euro.who.int/__data/assets/pdf_file/0004/258781/COSI-report-round-1-and-2_final-for-web.pdf

Increase research in the area of childhood overweight and obesity in order to update and improved existing policy, and ensure its consistency with those of the EU. Under this area the main related recommended actions are: financial support for research projects in the MS; prioritizing of projects according to the action plan; take into account socioeconomic differences when conducting research.

5.3 Action plan analysis- gaps in the action plan

It was determined that only at the end of 2020 (the last year of the action plan) the action plan will be monitoring and evaluated and only three years after the end of the action plan an assessment will be made as to which goals and actions are still relevant to prevent childhood obesity. Therefore, it is not yet possible to draw official and final conclusions based on findings from the MS and Commission analysis. However, analysis will be done based on the gaps that exist in the action plan and the most relevant data for the research question's scope. The biggest gap (which may also be the "Achilles' heel" in the EU attempt to prevent an increase in childhood obesity) is the legal validity of the action plan, and the general legal reference in the EU to food insecurity that leads to child obesity phenomenon. The EU is not prepared in terms of policy and regulations for the greatest health problems of the 21st century, obesity in general (and in particular child obesity) and NCDs, at an epidemic level. First of all, the broadest and main article at EU level that deals with protecting human health is Art.168 of the Treaty of the Functioning of the EU (TFEU). Art.168 of the TFEU mostly refers to cross-border health issues having a contagious affect that may impact from the open border policy in the EU, or are affected by the free trade policy among the MS (such as alcohol and tobacco). There is no reference in Art.168 of the TFEU to health problems that are not contagious and not related to free trade, but are expressed in epidemic proportions in the EU. Secondly, the entire action plan (like any other program conducted to date at EU level on preventing childhood obesity) is a collection of voluntary recommendation for the MS. The only references to EU law on the action plan were related to existing EU regulations dealing with the product labeling health claim, e.g. Regulation (EC) No. 1924/2006 on nutrition and health claims and Regulation (EU) No 1169/2011 on food information to consumers, which are less relevant to the attempt to prevent nutrition insecurity. Therefore, the most relevant questions that should be asked by the Union is whether now that incidence of child obesity is higher than ever in the EU (mainly at the low socioeconomic groups),

will a voluntary approach of guidelines and recommendations in order to prevent and eradicate this phenomenon be enough. Perhaps this is the time to consider amore binding framework on this issue at EU level. Possibly, with these dimensions of child obesity in the EU, it is time to promote a EU legal approach in addition to recommendations and supporting tools provided to the MS in order to promote the action plan, although the phenomenon of nutrition insecurity and child obesity in low socioeconomic groups appears differently in each MS. Even though the obesity and NCDs epidemic in the EU does not meet the classic definition of "cross-borders health issues" as described in Art.168 of TFEU, there is a complex phenomenon at EU level and its dimensions and negative consequences keep growing each year. Therefore an EU tailored solution that involves regulation seems more necessary than ever.

Another gap that exists in the action plan is education for the healthier choice as the wise choice. Throughout the action plan, the need for an educational approach is mentioned, in order to adopt a healthy lifestyle that includes balanced and healthy diet together with physical activity. The educational approach is mentioned mainly in the context of low socioeconomic groups, proposed as a solution that may bridge the existing educational gap and affect awareness of healthy lifestyle, as choosing healthy food over unhealthy, the importance of daily consumption of vegetables and fruits and the importance of weekly physical activity. But beyond the existing educational gaps there is also the economic aspect that restricts the low socioeconomic groups from purchasing healthy food products. Healthier food is also more expensive compared to unhealthy food. The education approach to healthier consumption might not be effective, if at the same time no measures are taken to change the cost of healthy food. In the action plan there is no reference to healthy food cost in the context of low socioeconomic groups in the areas of action nor is it indicates whether this problem was taken into account. In order to make the healthier and wise choice, economic steps are required as an integral part, since healthy food products are usually very expensive compared to unhealthy foods (even the most basic healthy foods) and not economically accessible.

6. The School Scheme for fruits, vegetables and milk

As there are many other recommended actions under each Areas of Action in the action plan, the review and analysis in the next chapter will focus on the Fruits, Vegetables and Milk School Scheme for several reasons: Though there are many other recommended actions under each areas of action in the action plan, the school scheme is an EU initiative program (under the Common Agriculture Policy) and therefore is in accordance with the thesis research question scope. The school scheme describes a cooperative action implemented between the Union and the MS and led by the Union, involving several related stakeholders from different fields and based on a sustainable perspective. Perhaps most importantly, the school scheme is already implemented at EU level so that evaluation and monitoring can be done according to EU performance and achievement to date.

The next chapter will analyze the school scheme program and evaluate the Irish school scheme implementation as case study.

6.1 The School Scheme Essence and Legal Reference

The school schemes for fruits, vegetables and milk appear in the action plan in the second Area of Action; promote healthier environments, especially at schools and pre-schools. The first scheme created was the School Milk Scheme (SMS) in 1977 and in 2009 the School Fruit Scheme (SFS) (which also refers to vegetables) was established. In August 2017 the two schemes were combined into a single scheme combining the three (milk, fruits and vegetables) in a common framework[107]. Merging the schemes into a single one was done for administrative and regulatory reasons and in order for MS to more easily carry out implementation from one scheme and apply for funding through one annual request (instead of two, as was previously done)[108]. Moreover, the combined scheme redefines European commission as the Commission empowered to adopt authorization and implementation acts regarding the school scheme related to the target group, approved MS application for the funding and

[107] Combined EU School Fruit, Vegetables and Milk Scheme begins operating in European Schools (2017). Employment, Social, Affairs and Inclusion. Retrieved from http://ec.europa.eu/social/main.jsp?langId=hu&catId=89&newsId=9022&furtherNews=yes (last accessed 20 March)

[108] EU school fruit, vegetables and milk scheme (n.d.) CAP policy areas. Retrieved from https://ec.europa.eu/agriculture/school-scheme_en (last accessed 22 March 2018)

approved the scheme strategy program (Art. 24.1 of Reg.2016/791). The school scheme is defined as one of the policy areas of CAP and is managed and funded by the CAP budget[109]. The school scheme initiative legal reference is based on four regulations; Regulation 2016/791 (basic regulation and amending regulation 1308/2013), Regulation 1370/2013 (implementing regulation), Regulation 2016/795 (refers to the indicative allocations by country and amending regulation 1370/2013) and Regulation 2017/740 (the detailed technical rules). However, all the above mentioned regulations become binding only after the MS apply for the scheme fund, following other steps and is finally accepted affirmatively by the European Commission (as will be detailed below).

The school scheme was designed in order to increase fruits, vegetables and milk consumption among children in the EU by improving accessibility, minimizing food inequality and increasing healthy lifestyle habits and awareness through educational frameworks. Funding is provided to schools and pre-schools in order to supply fruits, vegetables and milk at defined frequency and duration (Art. 23.1.a of Reg.2016/791), along with educational activities related to the consumed agricultural products (Art. 23.1.b of Reg.2016/791) and to cover logistical expenses during scheme implementation (Art. 23.1.c of Reg.2016/791) . The educational activities are required in order to promote more effective impact and learning process among children during implementation, in both short and long term (Art. 23.10 of Reg.2016/791). The educational impact is needed in order to instill habits into a healthy lifestyle pattern, and in terms of the children's consumption experience. The educational activities can play an important role in further promoting a healthy lifestyle, by improving the childrens' experience of food consumption, from just regular food consumption into an experimental experience while focusing on diverse, seasonal and regional/local agricultural products[110]. Educational activities can range from creating a school vegetables garden, learning about vegetables and fruits (colors, meaning, cooking class etc.) to visiting farms and more (Art. 23.10 of Reg.2016/791).

Over the years, the number of schools participating in the program expanded from approximately 30,000 schools throughout the EU and slightly less than 5 million

[109] *Supra* note 108
[110] Regulation 2016/791)

children participating during the 2009/2010 school year, to more than 79,903 schools across the EU and 11.7 million children participating in the scheme[111]. School year 2015/2016 saw the most schools and children participating in the scheme since 2009[112]. The school scheme is intended mainly for the target group of pre-school, primary-school and secondary-school (Art.22 of Reg.2016/791), but in some MS the European Commission has shown flexibility to widen the age range in target groups if needed. Thus the overall target age group ranged from 1 year to 19 years old during school year 2015/2016.

MS can submit a request to the European Commission in order to receive school scheme funding. However in order to receive the CAP support, a six-years national strategy program needs to be developed by the applying MS, as a condition to ensure effective and efficient implementation (Art. 23.8 of Reg.2016/791). The applying MS should develop well-planned six year national level strategy program that refers to the overall implementation scheme program. The national strategy program should contain the details regarding the MS priorities and aims (targeted groups and geographical regionals, method for achievement, expected results etc.). In addition, the MS evaluation and monitoring approach will enable the applying MS on one hand to analyze their actions and achievements (during and after implementation of the scheme program), and on the other hand communicate with the European Commission in order to report and update regarding progress and results of the applying MS' scheme program (Art. 23. a.3 of Reg.2016/791). In addition to the six-year scheme strategy program, MS are required to submit a new application each year for EU school scheme funding, detailing the total amount for fruits, vegetables and milk products they are willing to distribute through the school scheme (Art. 23.8 of Reg.2016/791). There are additional criteria on which the scheme program should be based, such as the priority of distributing fresh fruits, vegetables and milk (as well as lactose-free version) products in the scheme program (Art. 23.3 of Reg.2016/791). In order to vary the childrens' daily nutrition and meet nutritional requirements, MS are allowed to supply processed fruits, vegetables such as soups and canned goods in

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[111] *Supra* note 107

[112] EU School Fruit and Vegetables Scheme (2016). Key facts and figures on implementation 2015/2016 school year. Available at https://ec.europa.eu/agriculture/sites/agriculture/files/sfs/documents/sfs-facts-figures-2015-2016_en.pdf

addition to fresh fruits and vegetables (Art. 23.4.a of Reg.2016/791), and dairy products such as yogurt and cheese curd in addition to fresh milk and lactose-free versions (Art. 23.4.b of Reg.2016/791). The selected distribution products should be published in the scheme strategy program, and based on health and environments standards, diet diversification, seasonality and market availability with preference given to local and EU products (Art. 23.9 of Reg.2016/791). Products containing added sugar/ salt/ fat/ sweeteners and artificial colors (E620- E650) are prohibited for distribution through the school scheme program. Products with limited amounts of added sugar/ fat or salt can be considered for distribution under the school scheme program, but only if approved by the national health authorities (Art. 23.6 of Reg.2016/791) with an annual budget of €250 million (€105 million allocated for milk and €145 million allocated for fruits and vegetables) derived from the overall Common Agriculture Policy (CAP) annually budget[113]. When the scheme strategy program is approved by the European commission, the budget allocation among the participating MS is carried out in accordance with the scope of the 6-10 year old age group in that MS, and by the scope of development regions in that MS in order to guarantee that funding will be allocated mainly to the less developed regions (Art. 23a.2 of Reg.2016/791). Receiving school scheme funding from the EU is not intended to cancel or replace funding and assistance of national food programs, but rather to be implemented in addition to them (Art. 23a.5 of Reg.2016/791).

6.2 School Fruit and Vegetables Scheme for 2015/2016 School Year- Implementation results and facts at EU level

The CAP annually uses a significant part of the EU's common budget and is defined as one of the largest expenditures of the EU, with 38% of the EU general budget[114]. Therefore it stands to reason that there will be a reference in the CAP to health issues, and as well-established and involved in supporting cooperation. Moreover, the school scheme initiative aims to promote healthy eating habits among children. At the same time, success in the program may create a win-win situation for farmers and producers (as preference is given for local agriculture products) and to consumers as the

[113] *Supra* note 107

[114] How the EU Budget is Spent: Common Agriculture Policy (2016). European Parliamentary Research Service Blog. Retrieved from https://epthinktank.eu/2016/07/20/how-the-eu-budget-is-spent-common-agricultural-policy/ (last accessed 23 March 2018)

consumption of these agricultural products (fruits, vegetables and milk) will increase among children and their families.

- Participation index:
  During the school year 2015/2016, 24 EU MS participated in the school scheme funding. Finland, United Kingdom and Sweden choose not to take part in the school scheme, and Greece submitted a funding request but eventually did not participate due to internal (national) administrative problems. School year 2015/2016 saw the most participants, with a total of 11.7 million children from 79,903 schools from all over the EU participating (Fig. 6.2.1., see Appendix).

- Supplied measures:
  92% of the supplied fruits and vegetables under the school scheme were fresh, while the choice of the supplied fruits and vegetables was based on diet diversification and seasonality with preference given to local products. The most commonly supplied fruits and vegetables under the school scheme program were: apples, bananas, carrots, cucumber and tomatoes. The frequency and duration of the school scheme program varied from each MS, while in some MS the frequency ranged from once a week to daily consumption, for periods of several weeks to a full school year (Fig 6.2.2., see Appendix). The average weight for portion was 135 gram per schoolchild, while the highest portion weight was 218 grams in Italy, and the lowest portion weight was in Ireland with 66 grams. The average cost of fruit/ vegetables portion per schoolchild was €0.33, with the most expensive cost per portion in Lithuania at €1.17, and the cheapest in Romania at €0.05.

- Involved stakeholders:
  The most involved stakeholders in descending order were the Ministry of Education, the Ministry of Health, the Ministry of Agriculture, NGOs and the private sector.

- Budget expenditure across MS:
  18/24 of the participant MS used more than 75% of the fruits and vegetables

supply budget (Fig. 6.2.3., see Appendix), while 3/24 of the participant MS used 75%-50% of the fruit and vegetable supply budget received (Fig. 6.2.4., see Appendix), and the last 3/24 participant MS used less than 50% of the fruit and vegetable supply budget they received (Fig.6.2.5., see Appendix).

6.3 Case study- Ireland[115]

Ireland was selected as case study, since the Fruit and Vegetables School Scheme appeared in English at the CAP website.

6.3.1. Aim and method of the study[116]

The Eu school scheme was implemented in Ireland under the Food Dudes Healthy Eating Program (FDHEP), under the management of Bord Bia[117] alongside with the department of Agriculture, Food and Marine. Ireland was chosen as a case study, since it is the only EU MS to have the school scheme program evaluation report in English. Moreover Ireland has evaluated and monitored the short and long term impact of the school scheme program, in order to assess and evaluate the impact of the FDHEP. In fact Ireland conducted a follow-up study, in two intervention periods . The first assessment was done in the 2010/2011 school year on junior and senior infant classes and a second assessment was conducted six years later in 2016/2017 school year on fifth and sixth classes at the same schools. The assessment was done by daily intervention short term, and that exposed the children to fruits and vegetables. The intervention included a daily basic supply of fresh fruits and vegetables and continued for 16 days (for the juniors) and 8 days (for the seniors). Every day each school received a delivery of fresh fruits and vegetables, so that each schoolchild had the possibility to eat a fresh portion of fruit and a fresh portion of vegetables. In order to encourage the children to taste and consume from the supplied fruits and vegetables, they received small prizes and certificates for tasting and consuming and they also watched a short animated episodes designed for the FDHEP.

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[115] Food Dudes Evaluation Report (2016). Fruit and Vegetables Evaluation Report Ireland. Available at https://ec.europa.eu/agriculture/sites/agriculture/files/sfs/documents/ie_evaluation_report_-_2016-2017_en.pdf

[116] Supra note 115

[117] Ibid. The Irish Food Board, which managed the Food Dudes Healthy Eating Program (the national implementation of the Fruits and Vegetables School Scheme)

6.3.2. Data collecting[118]

During the FDHEP intervention, findings and data were collected in separate questionnaires and surveys intended for children, parents and teachers. As for the pre and post FDHEP intervention, evaluation and assessment were conducted using a special evaluating tool. In order to quantify childrens' lunch box contents in pre and post FDHEP intervention, a unique quantifying method was developed for FDHEP assessment and involved the class teachers (who were instructed in use of the tools and in measuring the lunchbox). With the quantifying tool, the class teachers recorded how many children brought fruit, vegetables and snacks in their lunchbox and how many of them consumed it and what they consumed.

6.3.3. Results

In order to assess the short and long term FDHP, two rounds of intervention were conducted within a 6-year period. The evaluations were conducted before and after the intervention in each round (2010-2011 vs. 2016).

6.3.3.1 Short term impact evaluation 2010-2011 (junior classes only)[119]

As stated, the results were based on the fruit, vegetables and snacks brought by the children compared to the fruits, vegetables and snacks consumed, pre and post intervention. Therefore a significant increase was observed in the number of children who brought fruits (54% baseline, 84% follow up) and vegetables (5% baseline, 58% follow up), while a decrease was observed in the number of children who brought snacks (39% baseline, 30% follow up). In the consumption evaluation a significant increase can be seen as well in the number of children who consumed fruits (48% baseline, 82% follow up) and vegetables (4% baseline, 55% follow up), and a decrease in the number of children who consumed snacks (37% baseline, 29% follow up) (Fig.6.3.1., see Appendix). However, it should be noted that consumption rates from the percentage of those who brought fruit and vegetables and snacks were almost identical for pre and post intervention (Fig. 6.3.2., see Appendix).

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[118] Supra note 115

[119] Supra note 115

6.3.3.2 Long term impact on fruits, vegetables and snacks brought in 2010-11 vs. 2016[120]

6 years after the first FDHEP intervention, a decrease was observed between the 2016 baseline compared to 2010-2011 follow-up percentage, but compared to the 2010-2011 baseline the percentage were still high. Comparing 2016 baseline to 2010-2011 baseline we see that there was still a higher percentage of children who brought one or more portion pre intervention of fruits (67%, 54%) and vegetables (12%, 6%) respectively. When comparing between 2016 baseline to 2010-2011 follow up it can be observed that there was a decrease in the percentage of children who brought one or more portion pre intervention of fruits (67%, 83%) and vegetables (12%, 57%) respectively. However, after the second FDHEP intervention (2016 follow up) compared to pre second FDHEP intervention (2016 baseline), an increase was seen again in the percentage of children who brought one or more portion pre intervention of fruits (75%, 67%) and vegetables (27%, 12%) respectively (Fig. 6.3.3., see Appendix). It is encouraging to see that higher rates still occur in the 2016 baseline compared to the 2010-2011 baseline. However, the findings from this comparison raise a very important point, which emphasizes the importance of long-term impact. Though the percentages of fruits and vegetables brought were still higher in 2016 pre FDHEP intervention (2016 baseline) compared to 2010-2011 pre FDHEP intervention (baseline), it may be necessary to maintain the intervention over time, rather than as a one-time intervention.

6.3.3.3 Long term impact on fruits, vegetables and snacks consumption 2010-11 vs. 2016[121]

As seen in the above section, the same pattern of high percentage of fruits and vegetables consumption (from those who brought) can be seen in 2016 pre second FDHEP intervention (2016 baseline), compared to 2010-2011 pre first FDHEP intervention (2010-2011 baseline). When comparing the consumption percentage of 2016 pre FDHEP intervention to 2010-2011 pre FDHEP intervention, we see that the fruits (56%, 47%) and vegetables (10%, 4%) respectively were still higher in the 2016 baseline, As when comparing 2016 pre second FDHEP intervention (2016 baseline) to

[120] Supra note 115
[121] Supra note 115

2010-2011 post FDHEP intervention (2010-2011 follow up), the consumption percentages of fruits (56%, 80%) and vegetables (10%, 53%) respectively were higher for 2010-2011 follow up (Fig. 6.3.4., see Appendix). Fig. 6.3.5. (see Appendix) presents the number and percentage of schoolchildren who brought one or more portions of fruit, vegetables and snacks to school, versus the number and percentage of schoolchildren who consumed one or more portions of fruit, vegetables and snacks (from those who brought).

6.3.4. Conclusion

The FDHEP intervention study emphasized and reinforced the benefits and helpful impact that can reached by the school scheme program (for short and long term), which points to focus on and what to improve in order to have a greater impact. According to the findings from both rounds of intervention, it is indicated that FDHEP intervention (in the way that it is implemented in the experiment- once every few years) has a better effect in the short term, rather than long term. Although it was indicate in the study that even after 6 years, 2016 baseline was still higher than 2010-2011 baseline, when 2016 follow up was performed the percentage kept growing at a similar rate to the 2010-2011 follow up. Even a single intervention is preferable to none at all. The results suggest that FDHEP intervention has a more positive effect on the junior classes than the senior classes, since after the second FDHEP intervention an increase (both in fruits and vegetables brought and consumption) was observed but at a lower rate than the first intervention. It is important to note that the second intervention lasted only 8 days, compared to 16 days in the first intervention, and this may actually be the cause for the rate differences. Teachers and parents reported that parental involvement is essential, as parents have a great influence on their children and therefore need to be more involved in the FDHEP in future.

6.3.5. Recommendation

- Preserve the FDHEP initiative (the school scheme program).
- If possible, it is better to supply fruits and vegetables on an ongoing basis or more often, as the impact can be maintained and strengthen the childrens' healthy eating habits, compared to a supply once every few years. However, if a more frequent supply is not possible, it is better to provide once every few years than not at all.

- Increase parental involvement in the FDHEP.

6.4. School Scheme program- points to consider

The school scheme program was not created from a HR perspective, but rather due to the great increase in child overweight and obesity. The initiative's purpose was to increase daily consumption of fruit and vegetables by making them more accessible to children. Implementation of the initiative was made possible through funding received from the CAP budget, which by now seems to have achieved the scheme's target goals.

7. Results and Conclusion

Results

As part of the WHO region most influenced by obesity and NCDs, with approximately 320,000 deaths yearly due to obesity and diet related diseases and with every third child in the EU classified as overweight or obese, there is no doubt that the EU is facing a complex challenge. As in other developed countries, childhood obesity exists in all sections of the population however, in recent years additional studies have shown the correlation between childhood overweight and obesity in low socioeconomic groups. Though the correlation causes are not yet entirely understood, data shows that child overweight and obesity is more common in the low socioeconomic groups. Among other factors contributing to child obesity, financial restrictions and accessibility of healthy and nutritious foods are known to effect diet quality and consumption habits. Therefore, childhood overweight and obesity in low socioeconomic groups is usually accompanied by nutrition insecurity.

Although there is a specific HR law that relates to the right to adequate food, under the international HR law and despite the increasing phenomenon in the EU of child overweight and obesity mainly in the low socioeconomic groups, there is no reference at EU level to the right to adequate food neither in the CFREU nor in the context of children's' rights. On one hand, the EU do recognize the right to adequate food as a basic right, but in official EU documents and policies it is only mentioned in the context of developing countries. On the other hand, there is no official recognition in an EU legal framework. Yet, worth noting, is that even though the right to adequate

food is not officially part of the CFREU or any EU children's' policies or related legal context, there are EU-level programs that were developed with the aim of supporting and enabling adequate food among children, even if the programs do not relate officially and directly to the right to adequate food and do not exist as policies of the right to adequate food. As an example, the EU Fruits, Vegetables and Milk School Scheme program does not mention the right to adequate food as one of the scheme foundations. However the scheme aims to provide an opportunity for all the MS to receive yearly aid funding on behalf of the annual CAP budget. By receiving these funds, MS can provide fresh fruits, vegetables and milk to more schoolchildren than without funding, and this allows schoolchildren to consume fresh fruits and vegetables more often. The school scheme implementation, among other achievements, can reduce child overweight and obesity resulting from nutrition insecurity. Acceptance of the funding is an MS right and each year MS can submit a request to receive the funding. Once funding is received, MS must comply with and apply to all relevant EU school scheme regulations in order to ensure the most efficient and optimal use of the budget as required. As for 2017/2018 school year, 24 out of 28 MS are participating in the school scheme initiative program and showing a positive contribution to the childrens' daily fruit and vegetable consumption habits.

Conclusion

The thesis research question aim was to analyze and evaluate how the EU addressed the phenomenon of child overweight and obesity resulting from nutrition insecurity, from a HR perspective. one of the main issues when talking about HR at EU levels is the fact that the EU is not a state-actor, and therefore is not officially obligated to UN HR treaties. Although I identified that a legal gap exists at EU level, there is no reference at EU level to the right to adequate food, even in the context of childrens' rights, yet there is a reference to the phenomenon. Even though the issue not addressed directly from HR perspective, the right to adequate food indirectly addressed the EU phenomenon of child overweight and obesity that results from nutrition insecurity. Several programs were developed and designed at EU level in order to halt the increasing phenomenon of child overweight and obesity that results from nutrition insecurity, and to make healthy nutrition be more affordable and increase awareness of a healthy lifestyle. The various programs have different legal meanings (in terms of application), and the EU involvement level can vary as well.

Some of the programs are designed in a way that allows MS to adopt part or all of the program and are tailored to the most suitable solution, while taking into account the current national child overweight and obesity status and existing national resources.

The Fruits, Vegetables and Milk School Scheme is a "game changer" for this phenomenon, since MS have an opportunity to receive financial support that will enable long term supply of fresh fruits, vegetables and milk for schools. Proper management and allocation of the CAP school scheme funding at the national level may change the future picture of child overweight and obesity, nutrition insecurity as well as the prevalence of NCDs in the EU. Yet it is not clear why the right to adequate food is not mentioned in the school scheme as HR factor, as it may strengthen the impact of the existing program and perhaps even integrate more relevant stakeholders (such as committees at EU level that relate to childrens' issues, health etc.), and thus expand the funding budget. In addition to the school scheme initiative, MS have other alternative options designed by the EU for the use of MS, such as the EU Action Plan on Childhood Obesity 2014-2020. MS may adopt and implement other solutions by using the action plan 2014-2020, which suggests voluntary actions at national level, as well as cooperative actions between MS, food industry and with NGOs. It seems that EU-level initiatives which include funding are more successful, as there is increased responsiveness from MS. Moreover, in EU initiatives that include funding from the EU budget, the MS' achievements and results are monitored and evaluated by the Union, and can improve according to the scheme.

Based on the existing rates of child overweight and obesity that accompany nutrition insecurity in the EU, the Union shall consider further steps in order to address this phenomenon:

- As the first step, the EU must refer to the right to adequate food, at least in the context of children's rights. Therefore the right to adequate food should be incorporated into the existing HR regulation (such as the ECHR), and/ or to health-related policies.
- Art.168 of the TFEU should be adapted to the morbidity issues that characterize the 21th century (such as diabetes, obesity, cardiovascular diseases etc.), as those NCDs already occur in epidemic proportions.

- Since legislation makes it easier to reach more vulnerable groups in society, in cases of MS that choose not to participate in the school scheme program (for any reason), the EU should demand that these MS l present an alternative plan to be implemented by this MS from the national budget. The plan will be approved by the European Commission in order to ensure that the national program target is in line with the EU plan to prevent nutrition insecurity and realize the child obesity objectives.
- At the present time, there is no harmonization between the various related documents referring to childhood overweight and obesity at EU level. The documents include policies, recommendations, guidelines and data however these are not harmonized in a single unified document. Therefore, this could cause difficulties for MS wishing to address the phenomenon by implementing EU recommendations and guidelines. The Union should consider formulating a single EU centralized database which incorporates all relevant regulations, policies and research which will connect relevant stakeholders and various policies. The EU can be based on the Freedom of Information Act (FOIA) by the Food and Drug Administration (FDA).
- Initiatives such as the Fruits, Vegetables and Milk School Scheme are suitable to the EU characterization and structure, since the scope of the child obesity and nutrition insecurity phenomenon appears at different rates in each MS. Each MS has different economical resources and different health policies (at a national level). Therefore, the school scheme program flexibility allows each MS to receive funding and adapt the allocation at a national level according to the childhood overweight and obesity in the MS.

8. Discussion

Despite the existing regulations, programs and policies in the EU related to obesity amongst children as a result of nutrition insecurity, it yet remains unclear to me why the right to adequate food is still not a part of the CFREU, or at least mentioned in one of the EU policies that is related to children. In my discussion, I refer to the current analysis on two different levels: the first concerns the lack of the right to adequate

food in developed societies, and the second refers to the current actions regarding child overweight and obesity at the EU level.

From my perspective there is a contradiction between acts that are being made by the EU. On the one hand, the EU does recognize the right to food and refer to it in the context of food aid in developing countries, but on the other hand, in their own back yard, no official reference is made. I do think there should be a reference on the EU level, currently, more than ever. As we witness how the phenomenon of nutrition insecurity that leads to obesity is spreading, it is clear that a change in the present approach is needed on all levels: starting from terminology, to formal recognition as part of the CFREU. The EU must first break through the barrier created by the fact that it is not a state-actor and therefore is not obligated to the UN HR treaties. Although the EU is not a state-actor, all of the EU MS have ratified the CRC and the ICESCR on a national level, which raises the question of why the EU is not making a step towards embracing the CRC and ICESCR treaties under a single harmonized act. Even though this initiative is not required by international law, it is expected from an ethical / practical stand point. In my view, as long as the EU fails to officially recognize the right to adequate food on the EU level, they cannot completely grasp how nutrition insecurity and malnutrition is expressed in developed countries.

Action-wise, the EU has a proactive approach to address child obesity. Through this proactive approach the EU has developed and still is developing essential programs designed to promote a healthy lifestyle that includes a balanced and healthy diet for children, such as the school scheme plan, that ensures the accessibility of adequate food to children from all social backgrounds, which is the very essence of the right to adequate food.

Future acts should be made by the EU regarding the right to adequate food in the context of nutrition insecurity and child obesity. A lot can be done on this subject, but in my opinion prioritization is key, and the EU should start with considering to establish a developed HR policy, one that correlates with the UN treaties. In addition to education for a healthy lifestyle, which is a significant aspect of the solution, the EU should keep developing programs and take actions that makes healthy food economically accessible and affordable in order to complement the educational acts that are being made. In order to achieve these goals, the EU should consider working

alongside the food industry on certain subjects. Last but not least, the EU should fund more research to shed light on the connection between child overweight and obesity and their socioeconomic groups (mainly focusing on low socioeconomic groups). There is no doubt that a lot can be achieved by the EU initiatives to reduce child obesity, however, one must think about the ethical significance of merely unofficial recognition of the right to food.

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- Art. 3 of the Treaty of the Functioning of the EU
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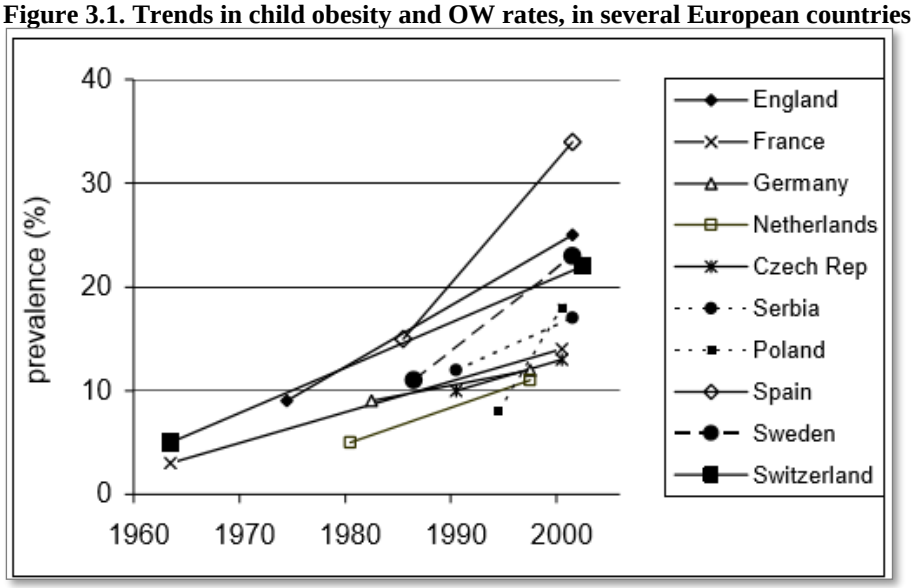
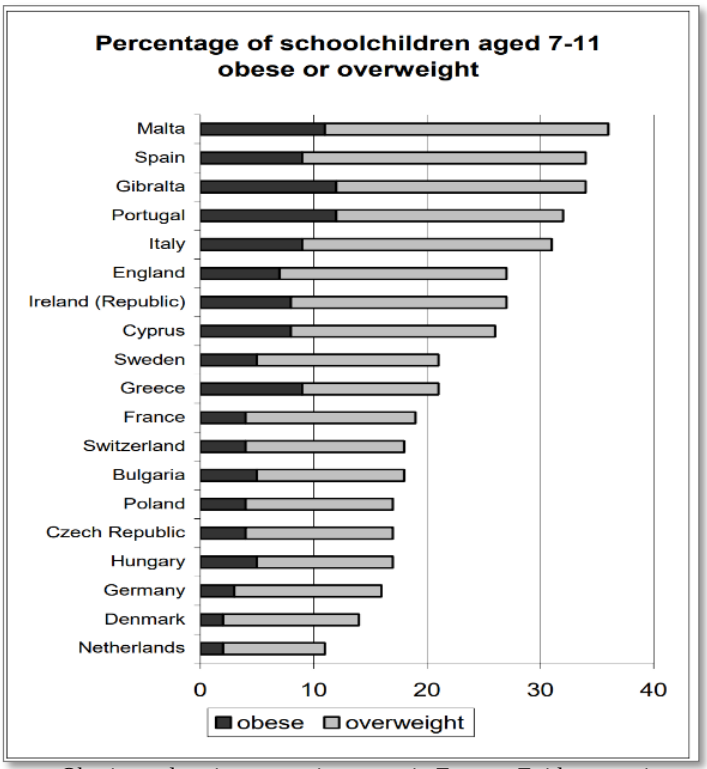
10. Appendix

Figure 3.1. Trends in child obesity and OW rates, in several European countries



Source: Obesity and socio-economic groups in Europe: Evidence review and implications for action[122]

Figure 3.1.1. Estimated percentages of obese and overweight children aged 7-11, for selected EU MS

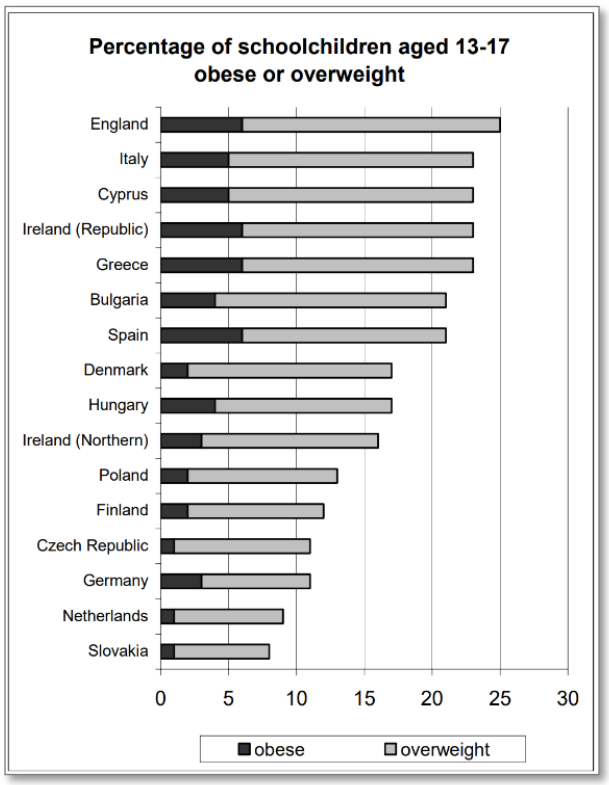


source: Obesity and socio-economic groups in Europe: Evidence review and implications for action[123].

[122] A, Robertson., T, Lobstein., C, Knai (2007). *Supra* note 12

[123] A, Robertson., T, Lobstein., C, Knai (2007). *Supra* note 12

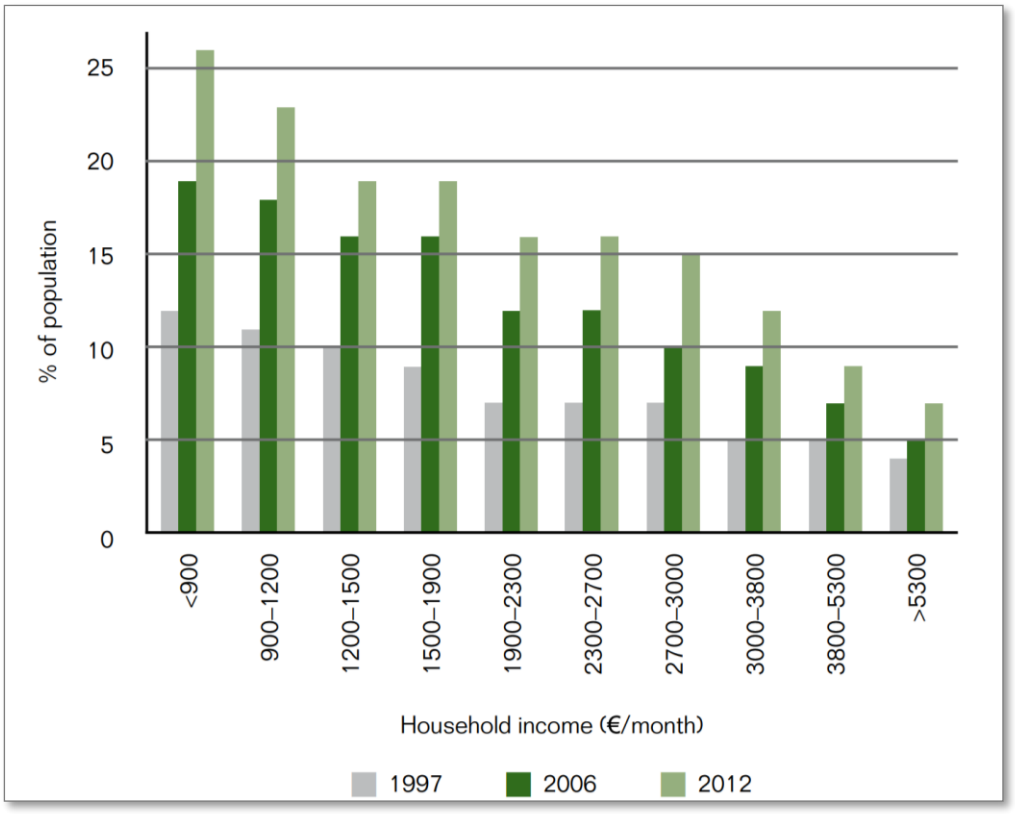
Figure 3.1.2. Estimated percentages of obese and overweight children aged 7-11, for selected EU



Source: Obesity and socio-economic groups in Europe: Evidence review and implications for action[124].

[124] A, Robertson., T, Lobstein., C, Knai (2007). *Supra* note 12

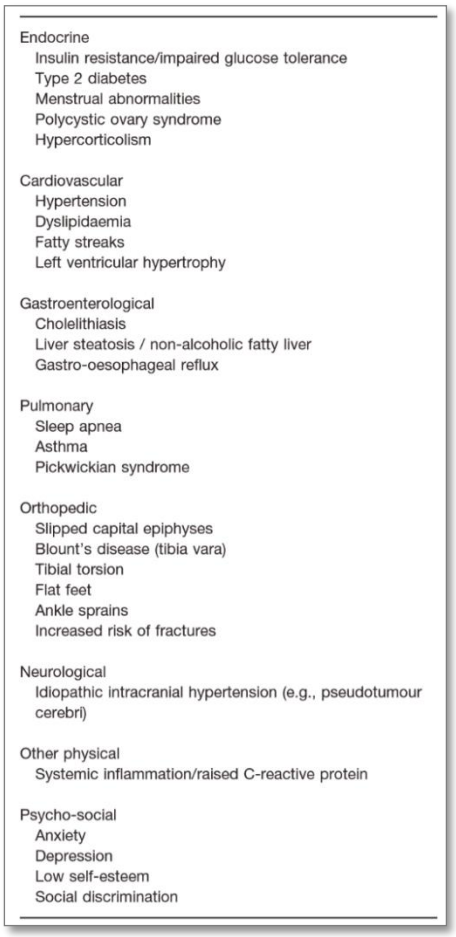
Figure 3.2.1. Adult obesity rates by different household income levels, during 1997-2012, France



Source: Obesity and inequities- Guidance for addressing inequities in overweight and obesity[125].

[125] A, Robertson., T, Lobstein., C, Knai (2007). *Supra* note 12

Figure 3.3.1. health problems that related to obesity and OW (NCD's)



Endocrine
- Insulin resistance/impaired glucose tolerance
- Type 2 diabetes
- Menstrual abnormalities
- Polycystic ovary syndrome
- Hypercorticolism

Cardiovascular
- Hypertension
- Dyslipidaemia
- Fatty streaks
- Left ventricular hypertrophy

Gastroenterological
- Cholelithiasis
- Liver steatosis / non-alcoholic fatty liver
- Gastro-oesophageal reflux

Pulmonary
- Sleep apnea
- Asthma
- Pickwickian syndrome

Orthopedic
- Slipped capital epiphyses
- Blount's disease (tibia vara)
- Tibial torsion
- Flat feet
- Ankle sprains
- Increased risk of fractures

Neurological
- Idiopathic intracranial hypertension (e.g., pseudotumour cerebri)

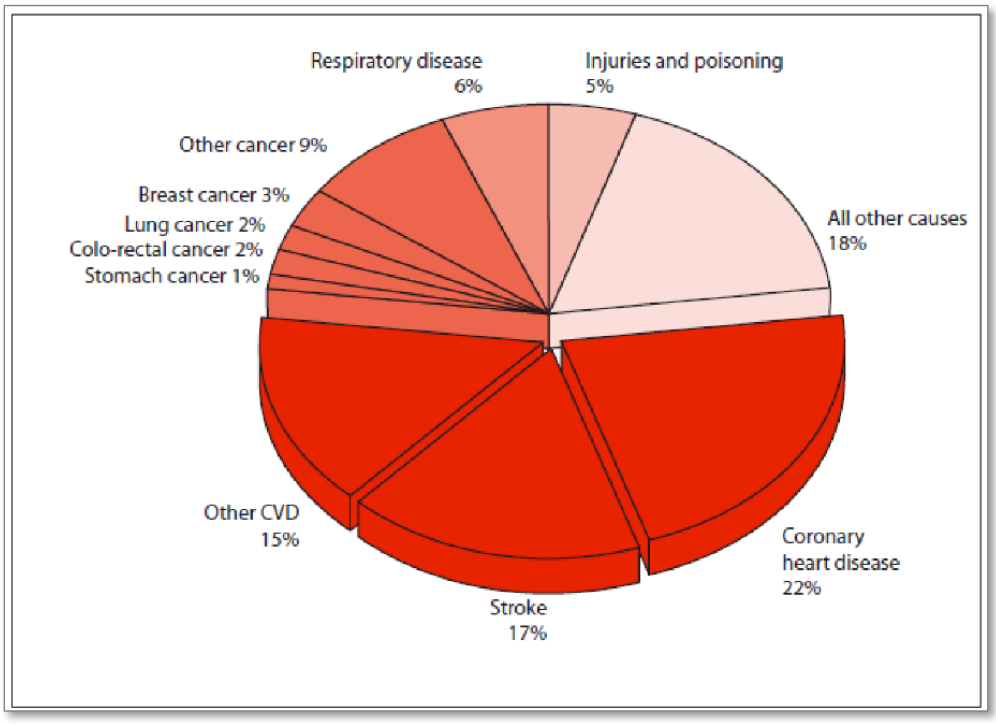
Other physical
- Systemic inflammation/raised C-reactive protein

Psycho-social
- Anxiety
- Depression
- Low self-esteem
- Social discrimination

Source: *Preventing Childhood Obesity, Evidence Policy and Practice* [126]

[126] Waters, E., Swinburn, B., Seidell, J., Uauy, R. (2010). *Supra* note 4

Figure 3.3.2. Deaths by cause for adults, European Region



Source: Towards a healthier, more sustainable CAP by European Public Health and Agriculture Consortium (EPHAC)[127]

[127] *Supra* note 53

Figure 3.3.3. Prevalence of diseases indicators among obesity children

	Mean	95% CI
Raised blood triglycerides	25.7%	21.5%–30.5%
Raised total blood cholesterol	26.7%	22.1%–31.8%
High LDL cholesterol	22.3%	18.9%–26.3%
Low HDL cholesterol	22.6%	18.7%–27.0%
Hypertension	25.8%	21.8%–30.2%
Impaired glucose tolerance	11.9%	8.4%–17.0%
Hyperinsulinaemia	39.8%	33.9%–45.9%
Type 2 diabetes	1.5%	0.5%–4.5%
Metabolic syndrome, 3 factors	29.2%	23.9%–35.3%
Metabolic syndrome, 4 factors	7.6%	4.6%–12.2%
Hepatic steatosis	33.7%	27.9%–41.8%
Raised serum aminotransferase	16.9%	12.8%–22.0%

Source: Preventing Childhood Obesity, Evidence Policy and Practice [128]

Figure 4.1.1

Article 24

1. States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health. States Parties shall strive to ensure that no child is deprived of his or her right of access to such health care services.

2. States Parties shall pursue full implementation of this right and, in particular, shall take appropriate measures:

(a) To diminish infant and child mortality;

(b) To ensure the provision of necessary medical assistance and health care to all children with emphasis on the development of primary health care;

(c) To combat disease and malnutrition, including within the framework of primary health care, through, inter alia, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking-water, taking into consideration the dangers and risks of environmental pollution;

(d) To ensure appropriate pre-natal and post-natal health care for mothers;

(e) To ensure that all segments of society, in particular parents and children, are informed, have access to education and are supported in the use of basic knowledge of child health and nutrition, the advantages of breastfeeding, hygiene and environmental sanitation and the prevention of accidents;

(f) To develop preventive health care, guidance for parents and family planning education and services.

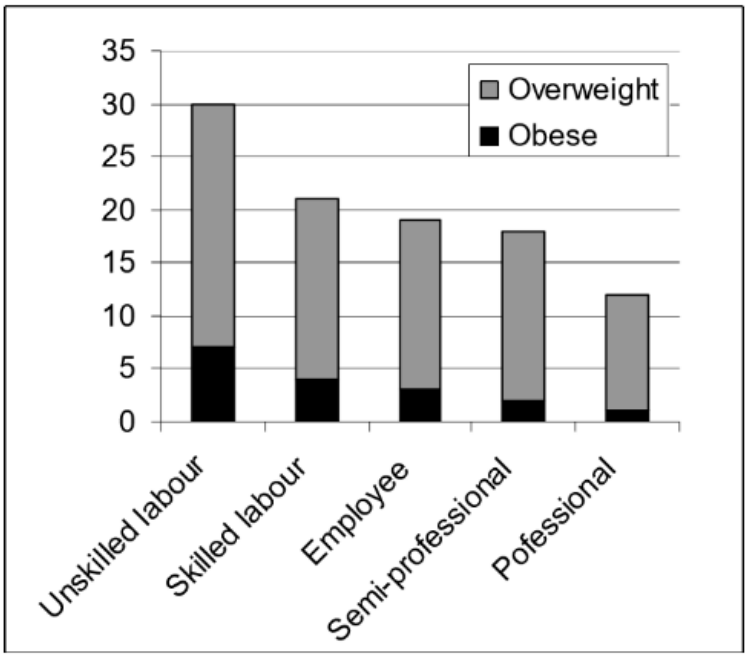
3. States Parties shall take all effective and appropriate measures with a view to abolishing traditional practices prejudicial to the health of children.

4. States Parties undertake to promote and encourage international co-operation with a view to achieving progressively the full realization of the right recognized in the present article. In this regard, particular account shall be taken of the needs of developing countries.

Source: Article 4 of the Convention on the Rights of the Child 1989

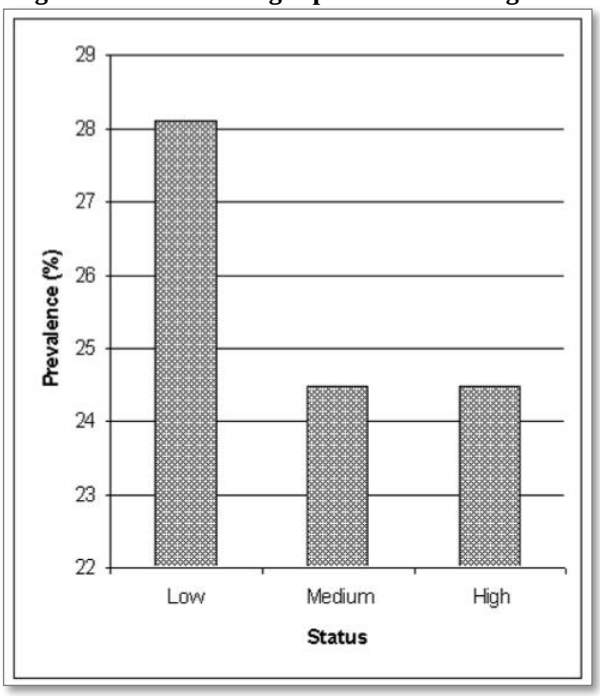
[128] Waters, E., Swinburn, B., Seidell, J., Uauy, R. (2010). *Supra* note 4

Figure 4.1.2.1: Overweight and obesity prevalence among adolescents by parent's employment status in France, 2004



Source: Obesity and socio-economic groups in Europe: Evidence review and implications for action[129]

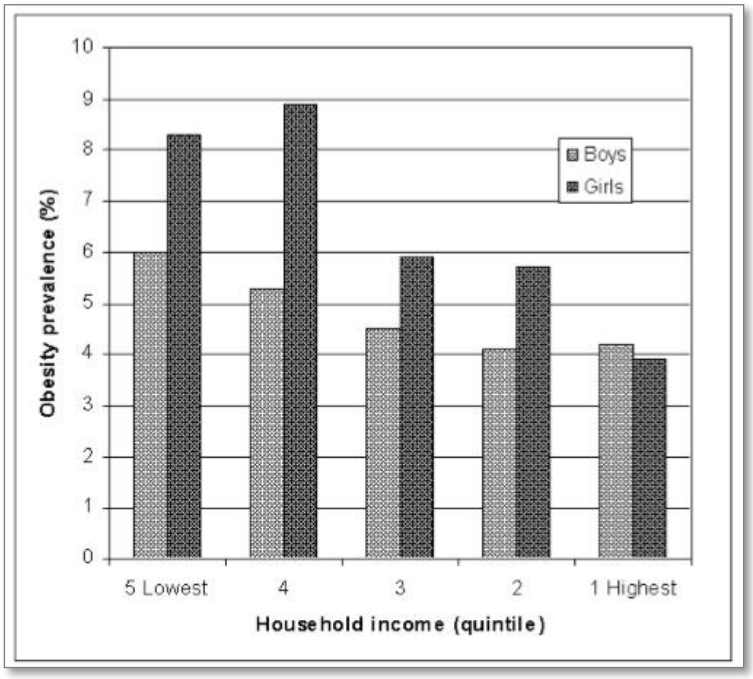
Figure 4.2.1.2. overweight prevalence among children and young people, by family SES status in



Source: *Obesity and socio-economic groups* in Europe: Evidence review and implications for action[130]

[129] A, Robertson., T, Lobstein., C, Knai (2007). *Supra* note 12

Figure 4.2.1.3. child obesity prevalence by household income (quintiles) in England, 2



Source: Obesity and socio-economic groups in Europe: Evidence review and implications for action[131]

Figure 4.2.1. Law text box

Article 11

1. The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions. The States Parties will take appropriate steps to ensure the realization of this right, recognizing to this effect the essential importance of international co-operation based on free consent.

2. The States Parties to the present Covenant, recognizing the fundamental right of everyone to be free from hunger, shall take, individually and through international co-operation, the measures, including specific programmes, which are needed:

(a) To improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources;

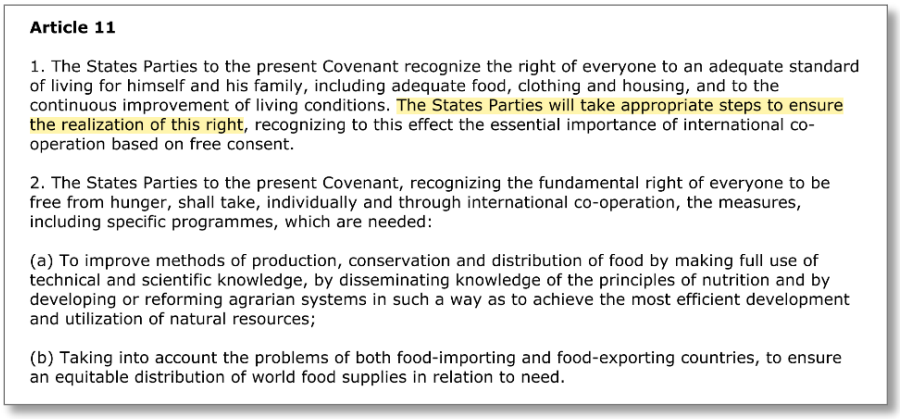
(b) Taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need.

Source: Article 11 of the ICESCR

[130] A, Robertson., T, Lobstein., C, Knai (2007). *Supra* note 12

[131] A, Robertson., T, Lobstein., C, Knai (2007). *Supra* note 12

Figure 4.2.2.1. Law text box



Article 11

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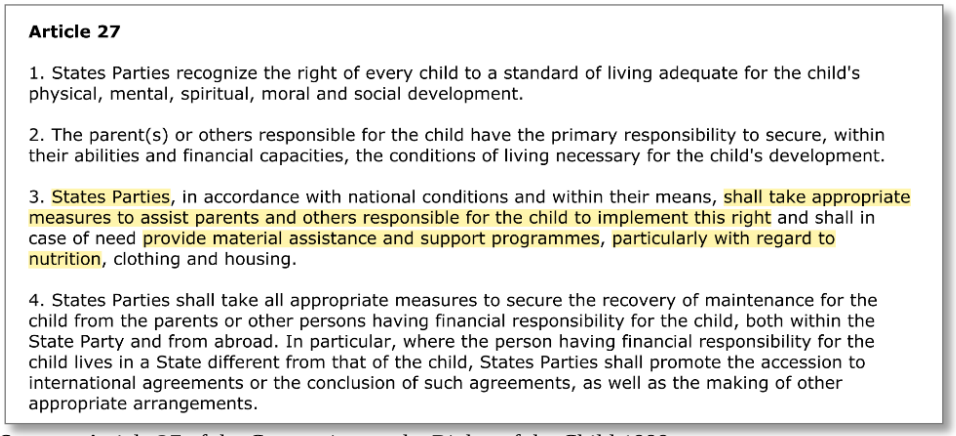
Figure 4.2.2.1. Law text box



Article 27

1. States Parties recognize the right of every child to a standard of living adequate for the child's physical, mental, spiritual, moral and social development.

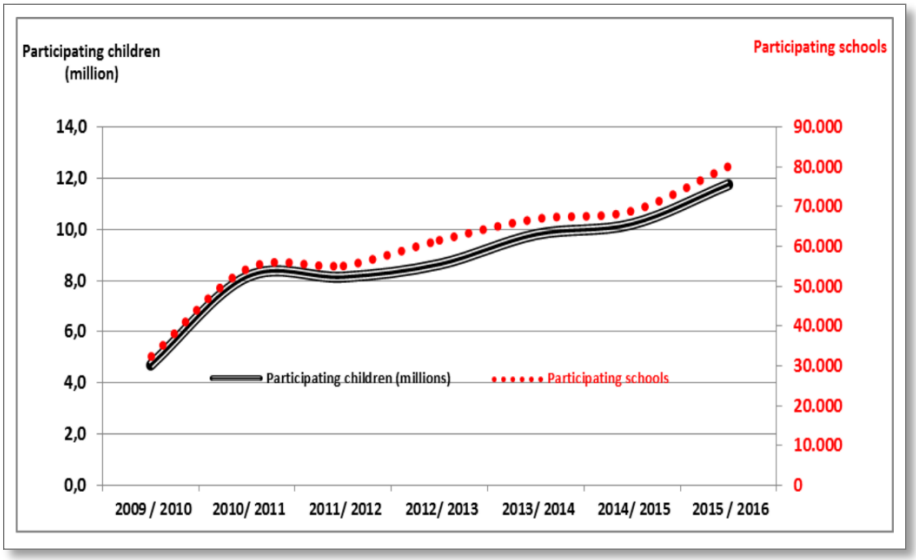
2. The parent(s) or others responsible for the child have the primary responsibility to secure, within their abilities and financial capacities, the conditions of living necessary for the child's development.

3. States Parties, in accordance with national conditions and within their means, shall take appropriate measures to assist parents and others responsible for the child to implement this right and shall in case of need provide material assistance and support programmes, particularly with regard to nutrition, clothing and housing.

4. States Parties shall take all appropriate measures to secure the recovery of maintenance for the child from the parents or other persons having financial responsibility for the child, both within the State Party and from abroad. In particular, where the person having financial responsibility for the child lives in a State different from that of the child, States Parties shall promote the accession to international agreements or the conclusion of such agreements, as well as the making of other appropriate arrangements.

Source: Article 27 of the Convention on the Rights of the Child 1989

Figure 6.2.1. The increasing participating



Source: The EU School Fruit and Vegetables Scheme, Key facts & figures on implementation 2015/2016 school year[132]

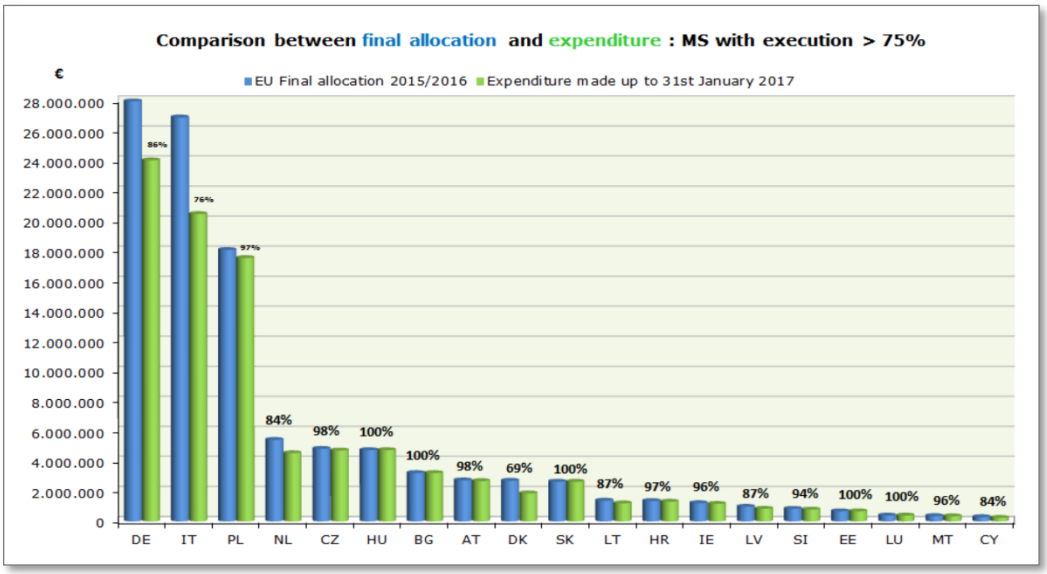
Figure 6.2.2. Frequency and Duration in MS during 2015/2016 School Year

	Frequency						Duration
	once a week	twice a week	three times a week	four times a week or more	daily	other	weeks
BE	■						30-37
BG		■					20
CZ	■						39
DK					■		40
DE	■	■	■				30-44
EE	■						35
IE					■		3-4
ES	■	■	■				1-27
FR						■	36
IT			■	■			18
CY					■		6
LV			■				15
LT	■						31
LX	primary				secondary		34/31
HU		■	■	■			22-31
HR	■	■					35
MT	■						32
NL			■				21
AT						■	1-40
PL		■	■				20
PT		■					30
RO					■		28
SI	■						38
SK		■					40

Source: The EU School Fruit and Vegetables Scheme, Key facts & figures on implementation 2015/2016 school year[133]

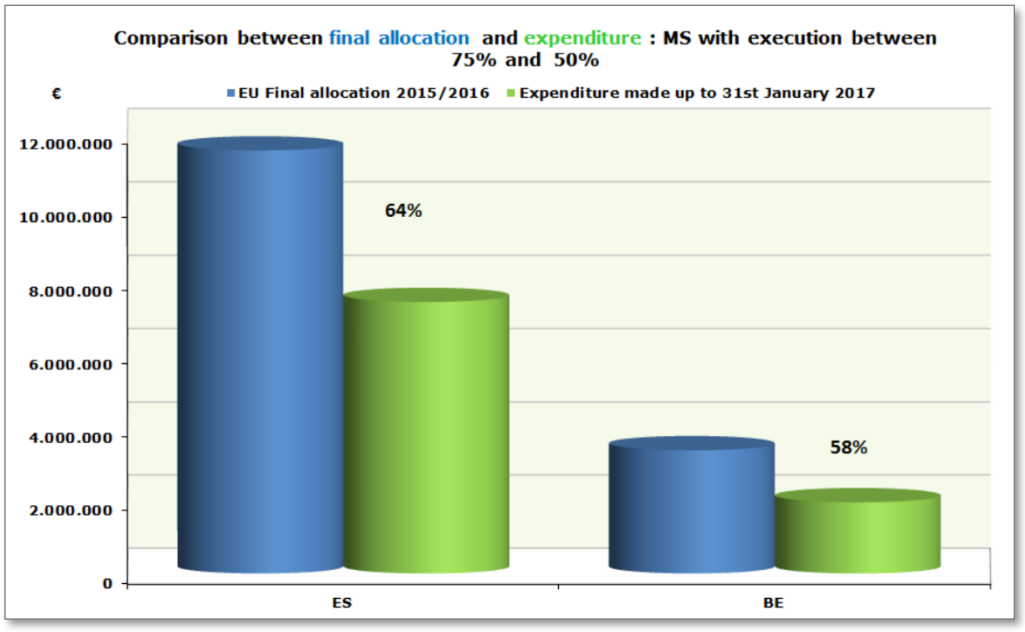
[132] *Supra* note 112
[133] *Supra* note 112

Figure 6.2.3. Final allocation comparing to expenditure, with execution above 75%



Source: The EU School Fruit and Vegetables Scheme, Key facts & figures on implementation 2015/2016 school year[134]

Figure 6.2.4. Final allocation comparing to expenditure, with execution 75%-50%

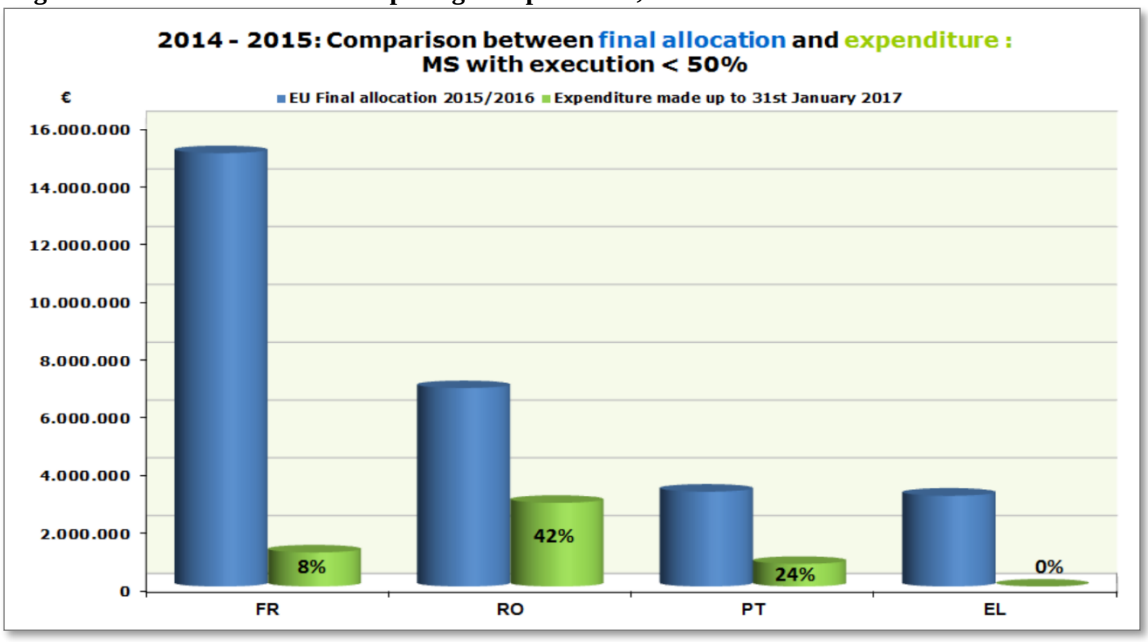


Source: The EU School Fruit and Vegetables Scheme, Key facts & figures on implementation 2015/2016 school year[135]

[134] *Supra* note 112

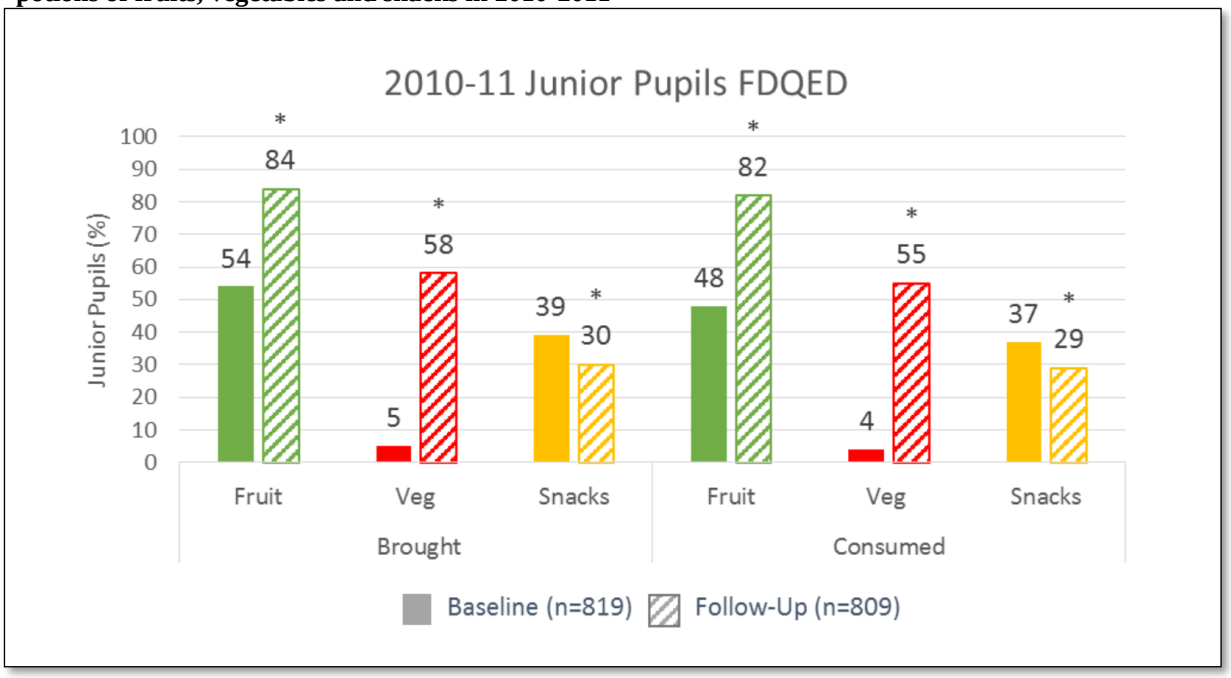
[135] *Supra* note 112

Figure 6.2.5. Final allocation comparing to expenditure, with execution below 50%



Source: The EU School Fruit and Vegetables Scheme, Key facts & figures on implementation 2015/2016 school year[136]

Figure 6.3.1. The percentage of junior schoolchild that brought and consumed one or more potions of fruits, vegetables and snacks in 2010-2011



Source: Food Dudes Evaluation (2016), Fruit and Vegetables school scheme evaluation[137]

[136] *Supra* note 112

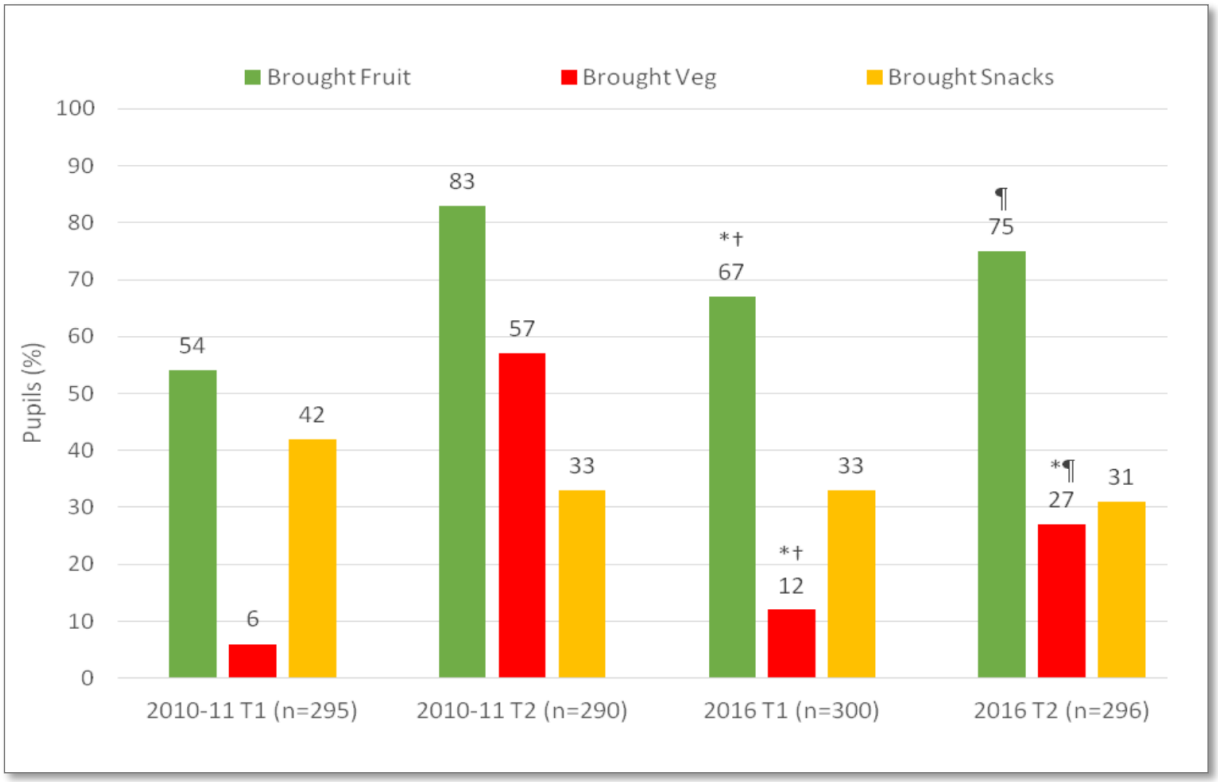
[137] *Supra* note 115

Figure 6.3.2. The pre and post consumption rates of junior schoolchild (only refer to those who brought fruits, vegetables and snacks to school)

FDQED 2010-11	Consumed in School Pre (n=819)			Consumed in School Post (n=809)		
	Fruit	Veg	Snacks	Fruit	Veg	Snacks
Total (n)	396	34	304	663*	446*	235*
Total (%)	48	4	37	82	55	29

Source: Food Dudes Evaluation (2016), Fruit and Vegetables school scheme evaluation[138]

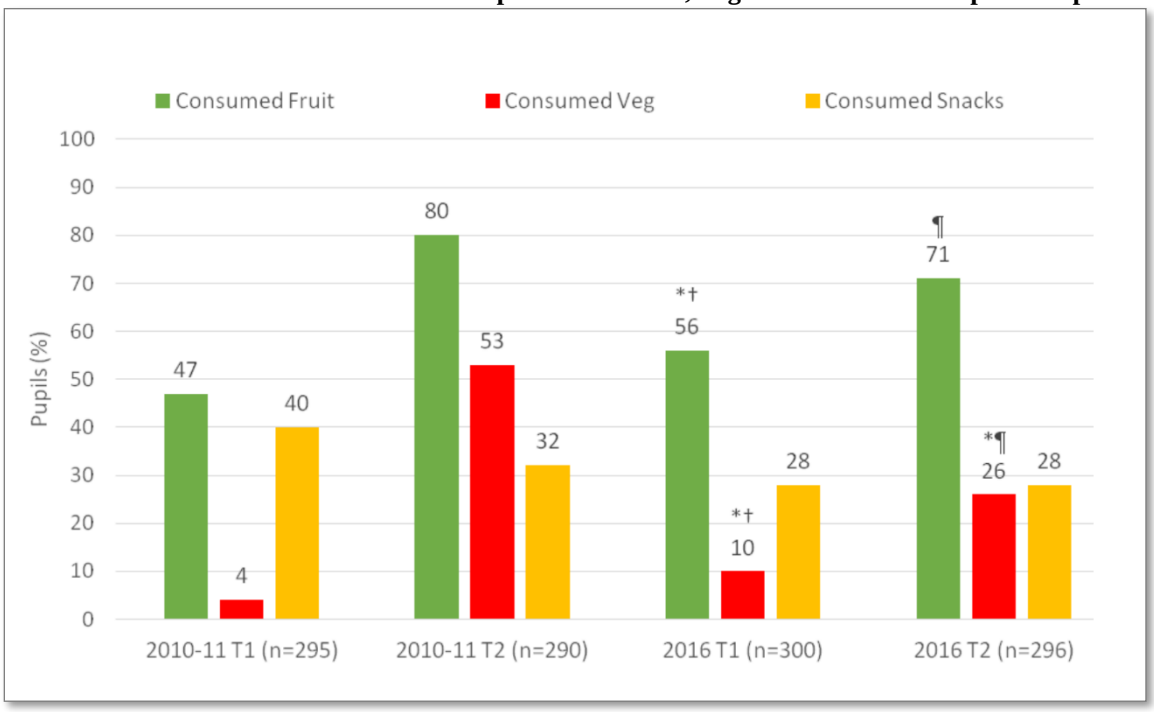
Figure 6.3.3. The percentage of junior schoolchild that brought one or more potions of fruits, vegetables and snacks pre and post 2010-2011 FDHEP intervention vs. the percentage of senior schoolchild that brought one or more potions of fruits, vegetables and snacks pre and post 2016



Source: Food Dudes Evaluation (2016), Fruit and Vegetables school scheme evaluation[139]

[138] *Supra* note 115
[139] *Supra* note 115

Figure 6.3.4. The percentage of junior schoolchild that consumed one or more potions of fruits, vegetables and snacks pre and post 2010-2011 FDHEP intervention vs. the percentage of senior schoolchild that consumed one or more potions of fruits, vegetables and snacks pre and post



Source: Food Dudes Evaluation (2016), Fruit and Vegetables school scheme evaluation[140]

Figure 6.3.5. The number and percentage of junior schoolchild that consumed one or more potions of fruits, vegetables and snacks pre and post 2010-2011 FDHEP intervention vs. the number and percentage of senior schoolchild that consumed one or more potions of fruits, vegetables and snacks pre and post 2016 FDHEP intervention.

	Brought			Consumed		
	Fruit	**Veg**	**Snacks**	**Fruit**	**Veg**	**Snacks**
2010-11 T1 (n=295)	161 (54%)	17 (6%)	125 (42%)	139 (47%)	13 (4%)	118 (40%)
2010-11 T2 (n=290)	241 (83%)	166 (57%)	95 (33%)	232 (80%)	152 (53%)	92 (32%)
2016 T1 (n=300)	202 (67%)	37 (12%)	99 (33%)	169 (56%)	32 (10%)	85 (28%)
2016 T2 (n=296)	223 (75%)	79 (27%)	93 (31%)	211 (71%)	77 (26%)	83 (28%)

Source: Food Dudes Evaluation (2016), Fruit and Vegetables school scheme evaluation[141]

[140] *Supra* note 115
[141] *Supra* note 115