

Food and Beverage Industry in Europe and Sustainability Issues

George Lodorfos, Anastasia Konstantopoulou, Ioannis Kostopoulos and Eyo Emmanuel Essien

Abstract

The food and drink industry is one of the world's largest manufacturing sectors and an integral part of the world's social, economic and cultural mix. As well as contributing to the economic development of nations, manufacturers have a key strategic role to play in ensuring fair trade between nations and future food security against the combined effects of climate change, higher global demand and increasing pressure on finite resources.

In an uncertain market environment, ensuring the highest quality and food safety, improving prosperity and fair trade agreements require the industry, policymakers and society to work together towards these goals. There is also a need for an increased emphasis within the industry and its full supply chain network on the broader social and economic impact of food and drink production, distribution, purchasing and consumption.

In this chapter, the authors undertake a literature and secondary data review and analyse what makes the European food and drink industry one of the world's leading manufacturing sectors. This chapter provides an overview of the industry and the current state of the sector. It covers issues relating to manufacturing, consumers' purchasing behaviours, distribution, marketing and retail, and the wider environmental trends, structures and economics of the industry. Finally, it presents some likely future trajectories in terms of social, consumer and regulatory trends, such as technological, marketing and production practices that develop and, in many cases, lead to new business models and paradigms.

Keywords: Food; drink; beverages; sustainability; consumption; EU

Background

The food and drink industry is the EU's biggest manufacturing sector in terms of jobs and added value, as well as an asset in trade with non-EU countries. Notably, the food and drink industry comprises of approximately 290,000 companies, employing 4.25 million employees for an annual turnover of €1.089 billion. It is the largest manufacturing sector in the EU, representing 15.6% of share turnover and a 15% share of employment in the EU manufacturing industry, placing it ahead of the automotive industry (FoodDrinkEurope, 2016).

In a global comparison, the EU food and drink industry ranks first in terms of turnover. In the period 2008-2014, it had a 17.8% share in food and drink exports and a trading surplus of h25.2 billion, placing the EU sector as the leading exporter of food and drink in the world, ahead of the United States and China (FoodDrinkEurope, 2016).

During the period of economic crisis in 2008–2012, its turnover grew by almost 7%, while turnover in the overall manufacturing industry decreased by 0.8%. For the same period, the number of companies grew by more than 7%, and employment remained stable. In terms of turnover, within the EU food and drink industry, 90% of enterprises produce 10% of the total turnover (ECSIP Consortium, 2016), suggesting that the clear majority of total turnover is generated by a small number of enterprises (be they private firms or cooperatives).

The sector benefits from the single market's opportunities, but at the same time faces certain challenges in both European and international markets, which require both resilience and adaptability. In recent years, the sector has faced a decrease in its relative competitiveness compared to other world food producers, mostly in terms of slower growth of labour productivity and added value. A major EU-wide initiative supporting EU food competitiveness is the High-Level Forum for a Better Functioning Food Supply Chain. This EU-wide platform involves all stakeholders along the chain and aims to discuss issues affecting the EU Food Sector from competitiveness to innovation, sustainability, creating added value and fostering better trading relations.

The current decision of the United Kingdom to exit EU will no doubt bring about important changes, not least in relation to access to the Single Market which accounts for around 90% of the industry's turnover (FoodDrinkEurope, 2016). These impending changes, as well as current global trends in consumer behaviour precipitated by concerns for the environment and changing socio-political dynamics, may affect the current global standing and competitiveness of the EU food and drink industry. For instance, the demand for healthier products, for example fresh, natural and whole foods, is increasing, as well as that for products with a smaller carbon footprint. Similarly, both major organizations and celebrities have started major movements against high intake of sugar, salt and trans fats. The challenge for manufacturers is that customers will be looking for products with less sugar, salt and/or trans fats, but without a significant change in taste (e.g. Coca-Cola Zero Sugar and its predecessor Coca-Cola Zero, marketed as tasting like regular Coke but without the sugar) or in price. Likewise, consumers increasingly seek to purchase products with fewer or no 'artificial' ingredients, free from GMOs, and without a long list of unfamiliar E-numbers on the label. This trend has affected labelling and created a shift towards non-GMO, organic and sustainable segments. In addition, the combination of advanced technologies and changing purchasing behaviours and lifestyles is pushing the development of e-commerce grocery and online shopping. Switching from one channel to another without affecting the customer's experience is going to be a challenge for the whole supply chain. Finally, a few consumer segments, such as vegetarians and vegans, are looking for value-added food and beverages that are high in protein, vitamins, minerals, etc., have longer shelf life, and/ or are packaged for snacking. Therefore, food security and health considerations impact on both consumers purchasing behaviours and the industry's research and development.

These trends/challenges, and what they portend for the sustainable competitiveness of the EU's leading manufacturing sub-sector (in terms of turnover, added value and employment), have led the industry to set out an ambitious goal for 2025 aimed at boosting growth through the production and marketing of products which satisfy qualitative needs whilst still creating jobs and caring for the environment (FoodDrinkEurope, 2016).

Sustainability and Fair Trade

As it has been already said, the concept of sustainability has increasingly attracted interest in the past decades. The most widely used definition is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (World Commission on Environment and Development, 1987). This definition encompasses two key concepts: that of 'needs', in particular, the essential needs of the world's poor and the limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs. Therefore, sustainability has an environmental, a social and an economic dimension.

Retailers, particularly a small number of large superstore and supermarket operators, are the major players in the distribution of food and drinks within Europe (Reynolds & Cuthbertson, 2014) but according to P. Jones, D. Comfort, and D. Hiller (2017), there exists a marked variation in the way key wholesalers report information on their sustainability strategies, which undermines their transparency and credibility.

In the last three decades, there has been an increase in communicating sustainability-related information about food and drink to the consumers. A survey by the European Commission identified 129 public and private sustainability-related food information schemes available at EU or national levels (Grunert, Hieke, & Wills, 2014). The most prominent ones are the Fair-Trade logo, Rainforest Alliance logo, Animal Welfare logo, and the Carbon Footprint logo.

Fairtrade principles and practices, which began as an initiative to enhance market access and fair trading opportunities for disadvantaged farmers and producers in the global supply chain, have now become a factor to be reckoned with for all businesses which have sustainability as a core strategy (Wright, 2008). The Fairtrade Foundation has been pursuing an ambitious strategy towards its vision that everyone, through their work, should be able to maintain a decent and dignified livelihood and fulfil their potential (Fairtrade Foundation Report, 2013). It is the ambition of the Fairtrade Movement (by using a variety of strategies including consumer information and empowerment, lobbying governments and product boycotts) to transform the international trading system (Wright, 2008). A product carrying a Fairtrade certification code indicates to the consumer, among other things, that the product is fairly priced to include an adequate margin for the farmer/source producer; that value is being enhanced throughout the supply chain in terms of producer capacity improvement and social premium payments; and that human labour is not being exploited without adequate compensation. The Fairtrade Movement, which is being championed by global NGOs and several consumer rights advocacy groups (e.g., Oxfam), has increasingly led to consumers being more conscious and selective about what they buy and who they buy from. EU businesses are bracing for this challenges by strategizing to meet these demands. A growing number of informed consumers are now looking out for and purchasing products advertised as 'fairly' or 'sustainably' produced. A 'Fairtrade' certification code on a product is taken by the consumer as a guarantee that the production and supply process for such a product meets minimum Fairtrade requirements.

The EU recognizes the importance of a well-functioning supply chain that produces fair end-to-end value for all stakeholders, including the society, consumers, retailers, manufacturers, farmers and governments and its contribution as the largest exporter of food and drink products in the largest manufacturing sector in Europe.

The commission is working on initiatives to combat unfair trading practices in business-to-business relations along the EU food supply chain. For example, the European Food Prices Monitoring Tool is a Commission initiative to increase transparency in the food supply chain. It provides data on price developments in the different stages of the food supply chain via price indices. The tool is meant to encourage competition throughout the agro-food supply chain and to improve its resilience to price volatility. The High-Level Forum for a Better Functioning Food Supply Chain (2010-2014) has hosted several debates on the topic among stakeholders. It has called for the development of a comprehensive policy framework to facilitate dialogue in the supply chain, develop and improve trading opportunities for SMEs and promote environmental sustainability and healthy food and drink products, whilst still providing an enabling environment that engenders sustainable competitiveness and job creation (FoodDrinkEurope, 2016). Transparency is mentioned frequently by commercial stakeholders and was prominent in developing the case for a more holistic approach to supply and value chains in order for them to become more equitable and sustainable (Fairtrade Foundation Report, 2013).

Sustainability

The EU food and drink industry recognizes the need to incorporate environmental sustainability into its growth strategy if it is to remain a socially responsible and competitive player in the global food and drink sector. For example, 90% of the members who responded to the FoodDrinkEurope Climate Change survey indicated a commitment to tackle GHG emissions across the food supply chain, from production to consumption (FoodDrinkEurope, 2016). In this regard, the European food and drink industry has introduced some commendable initiatives, such as the permanent dialogue of the High-Level Forum for a Better Functioning Food Supply Chain and the European Food Sustainable Consumption and Production (SCP) Round Table. Given an enabling operating environment, these initiatives can help enhance the credentials of the EU food and drink sector as a globally responsible entity.

European Political Strategy Centre (EPSC) (2016) argues that sustainability is an EU brand, because it is uniting all European citizens to make a societal choice that helps to fight poverty, end hunger, improve nutrition, promote sustainable agriculture, ensure healthy lives quality education for all, achieve gender equality, provide access to clean water and renewable energy, secure inclusive economic growth and decent work for all, provide resilient infrastructures, reduce inequalities, build liveable cities, preserve oceans, terrestrial ecosystems and biodiversity within a peaceful, democratic and a rule of law based society.

EPSC (2016) argues that, based on the Eurobarometer, 51% of Europeans think the EU's main objectives in terms of agriculture and rural development policy should be warranting reasonable food prices for consumers, and 56% of Europeans believe that it should ensure agricultural products are of good quality, healthy and safe.

L. Reisch, U. Eberle, and S. Lorek (2013) argue that the reasons which lead to unsustainable production of food and drink products are the industrialization and globalization of agriculture and food processing; the change of consumption preferences to more dietary and animal protein; the modern food styles which demand

heavily processed products; the increasing gap globally between rich and poor; and the recurring absence of food security during the production of big quantities of food.

H. Willer and L. Kilcher (2011) argue that globally, consumers are willing to pay more for a farming method that supports healthy agroecosystems and avoids the use of environmentally harmful agrochemicals. Yet the economic crisis did not positively affect the development of the organic food and drink market in Europe, leading to a lower demand because of decreased consumer spending power. However, they contend that when countries come out of the economic recession, the main problems will be a lack of supply compared to demand and the high prices of organic compared to conventional food and drink products.

Based on the European Commission's (2009) information, EU citizens are aware of the central role of the environment in their everyday life decisions. This is proven by the fact that the impact of each product on the environment is an important element for European consumers when deciding which products to buy and by the fact that almost 60% considered the environmental impact more important than the product's brand when making purchases.

EPSC (2016) mentions the EU's Emission Trading System (ETS) as a way of motivating companies to incorporate innovative and cleaner production methods. This policy makes greenhouse gas emissions to have a direct impact on the balance sheet of a company, because enterprises must pay for certificates for every ton of greenhouse gas emission.

EPSC (2016) suggests that EU fiscal policy can be fundamental for developing sustainable production, using public budgets to support new technologies or by trying to lever public and private investment. It is also suggested that a common European set of basic indicators should be developed to define more locally relevant forms of measurement. This is because the gross domestic product (GDP) indicator is not sufficient to measure sustainable growth.

EESC (2016) argues that food waste prevention and reduction is a shared responsibility for all stakeholders in the food chain; thus, the commission developed a plan to create a stakeholder platform, which collects the necessary measures and shares best practice on food waste prevention and reduction. Furthermore, it is mentioned that EU policies should promote a gradual transition to fossil-fuel-free agriculture models and support more efficient use of resources, including land, water and nutrients, across the whole production system.

Institute for European Environmental Policy (IEEP) (2013) discusses the fact that EU member states attempt to modernize and improve education systems by funding mobility programmes and by creating multistakeholder dialogue (including the industry, regional or local authorities, civil society and academia). This is done via trans-national partnership or networks and via collaborating public and private resources. Furthermore, EPSC (2016) argues that the EU does endeavour to offer education for sustainable development with a 'whole school' approach. The objectives are to cultivate the motivation and commitment of all pupils and students, to develop their critical thinking and to improve their educational attainment in general. Additionally, EPSC (2016) states that the Sustainable 2030 Agenda, in place since September 2015, perceives 'education and training' as vital to creating a sustainability culture.

Moreover, consumers themselves report that they expect retailers to direct their choices by stocking the 'right' products on the shelves. Therefore, the primary means of facilitating more sustainable food supply chains may lie not only in passive measures of raising consumer awareness but also in proactive strategies to increase the availability of sustainable products.

Organic

Suggestions from several recent studies and reports indicate that most European food and drink consumers, like many informed global consumers, are increasingly expressing a preference for organic products. These preferences, in addition to policy frameworks aimed at encouraging the development of organic agriculture worldwide, have led to phenomenal growth in both organically cultivated agricultural land area and the sales turnover on organic products. For example, a global survey conducted by the FIBL-IFOAM-SOEL Group (2016) between 1999 and 2012 shows a steady increase in the total land area dedicated to organic agriculture, with the EU experiencing a rise from 3.7% to 11.2% within the same period. Since the mid-1980s, in the European Union (EU) alone, the total area of farmland under organic production has increased steadily, to 10.3 million hectares as of 2014 (Willer, Schaack, Lernoud, & Meredith, 2016). European markets for organic food have grown considerably over the past ten years (FIBL-AMI, 2014; Hamm & Michelsen, 1996; Terlau & Hirsch, 2015; Zanoli & Naspetti, 2002). Figures released by IFOAM 2016 showed a double-digit growth in the last decade (as of 2014) in the EU market for organic food. Notably, the total value of the EU organic retail market more than doubled from h11.1 billion in 2005 to h24 billion (h26.2 billion across the European continent) in 2014 (Meredith & Willer, 2016). The number and range of people buying organic food have also risen, with consumers spending more on organic food. Between 2005 and 2014, organic produce consumption per capita increased by 110% from h22.4 to h47.4 (Meredith & Willer, 2016).

Such advances reflect the vibrant and innovative nature of the organic food and farming industry, but according to the FIBLIFOAM-SOEL (2016), the growth in the organic food market presents both an opportunity and a challenge, which the EU food and drink industry must face if it wants to remain relevant in the global food and drink sector. Continuous investment in R&D and lobbying for favourable policy frameworks may enhance its competitiveness in the global marketplace and meet consumers' demand for high-quality food production that supports the environment and animal welfare.

S. Meredith and H. Willer (2016) note that the growth of the organic market has varied across the EU Member States. For example, organic retail sales in 2014 increased hugely in Sweden (45%), less in France (10%) and in countries Belgium (3.8%) and the United Kingdom (4%) the organic retail growth rates were below average. Similarly, there are huge differences in per capita consumption of organic food among the member states, with Luxembourg and Denmark leading and Slovakia and Bulgaria being at the lower end.

H. Willer and L. Kilcher (2011) and O. Von Hagen and A. Kasterine (2011) suggest that products which are identified with quality, safety and sustainability principles are preferred by consumers, but other main reasons for the increase in organic agriculture are grants available under rural development programmes, the legal protection, and the European and the national action plans.

Despite these figures, which suggest that the market for organic products is developing well, whether the organic sector develops proactively or not depends not only on organic area payments but is also the result of different public support measures, including maintenance and conversion support, marketing support, and training and education (Sanders, Stolze, & Padel, 2011). Similarly, H. Willer and L. Kilcher (2011) suggest that a strategic response from the organic products' brands is to notify consumers about the sustainability of an organic product by putting emphasis on 'green' and ethical claims. At the same time, the companies should avoid greenwashing in their marketing because it damages consumers' confidence in sustainability products. Moreover, IEEP (2013) argues that there should be more advice to consumers around bogus greenwashing of food, because this will not help consumer confidence in the advertising messages of sustainable food.

Challenges and Opportunities

Competition

The EU food and drink industry is generally competitive on a global scale and produces high-quality, healthy and safe food. However, this competitiveness is being threatened by several issues resulting in slower growth in labour productivity and added value. In addition, certain problems have been observed in the functioning of the EU food supply chain linked to lack of transparency, sub-optimal business-to-business relationships, lack of attractiveness for skilled workers and low market integration across EU countries. In response, the European Commission leads policy measures through a high-level forum, works to combat unfair trade practices, monitors European food prices and funds competitiveness studies (ECSIP Consortium, 2016).

At the core of the EU food and drink future strategy focus is the desire to remain a leading global competitive player whilst still providing jobs and healthy products sustainably. There have been concerns in recent times that the food and drink industry in EU is losing its competitive edge because of the rising cost of inputs, which cuts down funds available for investment in R&D. Resource scarcity and volatile commodity prices, 'red tape' and regulatory hurdles, and changing social and political dynamics are some of the forces contributing to the erosion of the EU food and drink industry's competitiveness (FoodDrinkEurope, 2016). One response to the dwindling competitiveness of the EU food and drink sector has been a call for policy makers to strengthen the Single Market by ensuring harmonized application of all EU legislation, as well as preventing the re-nationalization of existing EU laws (FoodDrinkEurope, 2016). Given the cost implications of changing consumer demand and the need to invest more in clean and sustainable production processes, the EU food and drink sector may need to do more to ensure its continued competitiveness in the global food and drink market. Moreover, the current decision by the United Kingdom (an important partner in the EU project) to leave the European Economic and Political Union may also have important implications for the EU food and drink sector's capacity and competitiveness. The ECSIP Consortium (2016) has identified changing incomes and social demography, the issue of trust and ethics (transparency) in supply chains, and technological innovation as the key forces, which shape the competitiveness of the EU food and drink industry in the future. It suggests that policy frameworks aimed at strengthening the international trade position of the EU, supporting productivity and improving the quality and functioning of the supply chain should be implemented as part of strategies to enhance competitiveness in the industry.

Within the EU food and drink industry, there is significant competitive pressure and rivalry among manufacturers and grocers who are competing to develop similar substitute products for consumers who are looking for value-for-money as well as value-added products. In addition to the internal competition and rivalry among the EU food and drink manufacturers, other important factors also come to play in shaping the industry's outlook. Some of the important issues, which may present challenges and opportunity to the competitiveness and survivability of the EU food and drink industry, are discussed below.

Political Changes

Current global environmental concerns and changing consumer preferences are forcing governments to make changes to the 'usual' way of doing business. Politically motivated changes in government policies and legislations are forcing businesses to make far-reaching structural changes to how they operate. Stricter government policy guidelines on food safety and labelling, the requirement for more transparency on sources and remuneration of labour at raw material sources, protectionist tendencies leading to the re-nationalization of multilateral laws, and the current commitment by most governments to reduce global warming (by forcing businesses to invest in expensive alternatives to fossil fuel) are a few of the political challenges being faced by the EU food and drink industry in its bid to expand globally. The recent decision by the United Kingdom to withdraw from the European political block will also have implications for the single market in the form of the uncertainty that may be created by a lengthy period of negotiations and re-negotiations of the relationship/agreement between hitherto equal partners. The cumulative effect of these political forces may bring great pressure to bear on the EU food and drink industry's capacity to be profitable whilst still creating jobs and being a socially responsible sector. However, the European Commission is continuing its focus on improving the competitiveness of the EU food sector and the functioning of the single market for food. It also strives to create new trade opportunities for food and drink products through various trade negotiations and dialogues with third countries (http://ec.europa.eu/growth/sectors/food_en).

Economic

The report by the ECSIP Consortium (2016) argues that the continuing fall-out of the global financial crisis (which began in the United States in 2008) is one of the single most important economic events affecting the EU food and drink sector, because of the effect it had on consumers' disposable income. The report also observes that although GDP per capita and household expenditure recovered to pre-crisis levels in 2013, the downward trend in the growth of disposable income (from 17% between 2003 and 2007, compared to 4% between 2008 and 2012) indicate that EU consumers have less to spend in absolute terms (ECSIP Consortium, 2016). Therefore, although Eurostat statistics show that relative expenditure on food and drink remains fairly constant, the fall in real income indicates changes in consumer behaviour - consumers may be switching to cheaper alternatives (ECSIP Consortium, 2016).

While the EU is experiencing a fall in average disposable income, average global incomes have risen and are expected to continue rising in coming years (ECSIP Consortium, 2016). The evolving shape of the EU Single Market and the new marketing frontiers presented by growing middle-income populations in Emerging World Economies are some of the economic realities facing the global food and drink

industry today. The EU food and drink industry can take advantage of the opportunities offered by new export markets, because rising global income means that more and more people can afford good quality food and drink.

Social Factors

A wide variety of social factors including global population growth and longevity, consumer changing preferences hinged on changing lifestyles, pressure for more corporate social responsibility and sustainable practices throughout the supply chain and rapid urbanization are some of the important social trends that may shape decisions in the food and drink sector (ECSIP Consortium, 2016). Current statistics show that the global population is growing rapidly and the proportion of the population who are over 65 is also rising. While other developed countries such as the United States, Japan, Australia, Brazil and Canada have witnessed substantial growth (ECSIP Consortium, 2016), there has been a decrease in EU population growth in the past decade and at the same time a growing proportion of the EU population is living up to 80 years and beyond.

The emergence of 'millennials' has created a whole new food and drinks market, which must be catered for. For example, older people may require special diets, which must be packaged and presented in such a manner as to be easily accessible to them. Besides being nutritious and healthy, such foods and drinks must take cognizance of the physiological limitations that come with aging (e.g. difficulty in opening certain types of container). Projection of the changing demographics of EU show that by 2030, 23.5% of the total EU population will be aged 65 and above. Therefore, it is imperative that the EU food and drink industry develops 'functional' food and drinks suited to the specific needs of this growing segment (ECSIP Consortium, 2016)

On the other end of the spectrum, an increase in consumer awareness amongst the younger EU population and rising demand for transparency and ethical business practices contribute in forcing food and drink organizations to provide more information about their sustainability credentials, and this is also helping more consumers to make choices in line with their beliefs and conscience.

The rising migration both within and from outside EU is also changing its demographic makeup. Such diversity may also translate to viable and distinct market segments, which the food and drink industry cannot ignore.

Food consumption trends and choices in many countries are shifting, as mentioned throughout this chapter, towards healthiness, quality and more sustainable products (Dimara & Skuras, 2005). This changing trend is reflected in the rise of organic and whole-food diets. Contemporary lifestyle changes have brought about a new and growing food market for these segments (including but far from limited to vegetarians, vegans, pescetarians and so-called Foodies, Healthies and Greenies). For this consumer segment, eating may be less of a fad and more of a lifestyle choice — particularly among the younger generation. These socio-demographic changes are leading to important product differentiation approaches and the premiumization of brands: brands which present themselves as meeting these unique market characteristics are likely to be recognized and patronized.

Technology and Innovation Factors

The applications of innovative techniques and processes in the food and drink industry have the potential for lowering long-term costs and widening consumer choice options. As one of its cardinal strategies for competitive growth and sustainability by 2025, the EU food and drink industry (currently lagging its peers such as the United States and Japan) is planning to invest substantially in R&D (FoodDrinkEurope, 2016). While the use of innovative technology in the food and drink industry has brought about a wide range of options and improved consumer experiences (e.g., better packaging and labelling, more traceability of raw material sources and greater information on the product production process), EU consumers are still generally cautious about its use in the production of food and drink products. For example, while U.S. consumers overall express favourable attitudes towards GM food products, EU consumers (about 54%) reject the idea of consuming GM food, saying it is neither good for them nor their family (ECSIP Consortium, 2016). While EU food and drink firms are mandated to specify the GMO contents of their products on the packages, manufacturers in the United States and Canada are not. Technology and process innovations can give a competitive edge.

Technology is necessary to create packaging, food labels and to produce food. Similarly, automation can improve processing, baking, canning, freezing or packaging of products. Major changes in technology, including information technology and biotechnology, have led to new products and new methods of organizing the food supply chain. Moreover, with technology, the whole supply chain may become greener, more efficient and more effective. Finally, advances in technology help food corporations to reach more consumers quicker, easier and cheaper.

Legislation and Government Regulations

Due to increased demand for global traceability of products and their attributes, in 2014 the Commission launched a Fitness Check on the General Food Law Regulation, which establishes the fundamental pillars of the EU food and feed law (https://ec.europa.eu/growth/sectors/food/competitiveness_en). The EU food safety law aims to ensure a high level of protection of human health while considering the protection of animal health and welfare, plant health and the environment.

Although the companies that make up the EU food and drink industry have a highly harmonized legislative structure (about 98% of Food Laws are harmonized at the EU level), recent political changes and calls for the re-nationalizations of some important pieces of legislation are threatening the strength and continued survival of the single market (FoodDrinkEurope, 2016). Any differential or preferential application of food and drink policies/laws may result in mistrust among member states and operational problems. For instance, in order to make business processes more transparent, the amended EU regulations on 'disclosure of non-financial and diversity information' (EU-Directive 2014/ 95/EU) will introduce the compulsory integration of sustainability information into the reporting duty of retailers in 2017. EU food legislation is highly harmonized and the sector benefits significantly from the opportunities offered by the EU Single Market. At the same time, however, the sector faces certain challenges in both international and European markets (http://ec.europa.eu/growth/sectors/food_en).

The growing complexity of food supply chains has given rise to new risks and concerns about food safety and security. Food processing plants are closely monitored, with regulations and guidelines that emphasize personnel and food safety and proper waste disposal. Similarly, food standards agencies across Europe are focusing their efforts on ensuring a safe and sustainable food supply. In addition, EU food legislation has developed tremendously over the last 15 years to respond to growing concerns with respect to food safety, consumer information and the functioning of the internal EU market (Wijnands, Bremmers, van der Meulen, & Poppe, 2008).

Driven by the twin desires to protect producer interests in regional speciality food and drink products (SFDPs) and to encourage consumers to purchase locally produced food and drink products, the EU implemented Regulations 2081/92 and 2082/92 to 'protect' food and drink products which had either a recognizable geographical origin or a special character (Ilbery, Kneafsey, & Bamford, 2000). The shift in consumer demand towards quality and certified place of origin led to the development of three EU schemes for quality food products. Products of Protected Designation of Origin (PDOs) covers foodstuffs that are produced, processed and prepared in a given geographical area using recognized know-how. Products of Protected Geographical Indication (PGIs) covers food that is linked to a specific geographic area in at least one of the stages of production, processing or preparation and which can benefit from a good reputation. Products of Traditional Speciality Guaranteed (TSGs) are not always regionally denominated products but have a traditional character either in the composition or means of production. These three schemes for the production of quality food were successfully established in 1992 as part of the EU's rural development policy (Parrot, Wilson, & Murdoch, 2002) and in accordance with consumer protection policy (Dimara & Skuras, 2005).

Environmental

The current global concern about climate change and the sustainability of the ecosystem are largely focused on the production processes of manufacturing firms. The rapid depletion of finite natural resources, environmentally harmful production processes and technologies which result in harmful products and by-products, consumption habits which lead to the extinction of endangered species, the continued use of certain environmentally harmful pesticides in agriculture and the disposal/recycling of industrial waste are all issues generating concerns for world governments. The recent withdrawal of the United States from the Paris Climate Change Agreement leaves the EU at the forefront of efforts at reducing global warming to UN-agreed levels. Europe is obliged to act on these key environmental challenges for the years to come: to adapt to and mitigate climate change by limiting global warming to well below the 2°C target; to ensure food and energy security; to preserve biodiversity; to promote development of alternatives to fossil-based economies and to foster economic growth and social prosperity.

The natural resources upon which food production relies will be coming under increasing pressure as the global population, and therefore demand, increases. Notably, in 1960, one hectare of land fed two people, while it is projected that in 2050 one hectare of land will be required to feed five people (Data and Trends EU Food and Drink Industry, 2016). Moreover, world consumption growth outpaces population growth for the major commodity groups, and the dietary pattern in developing countries

will continue to shift towards more costly vegetable oils and animal proteins at the expense of cereals (World Food Consumption Patterns - Trends and Drivers, 2015).

In addition to the increase in global demand for food, effects of climate change such as high temperatures and extreme and unpredictable weather events are likely to affect food production. The changing climate will affect the length and quality of the growing season, and production will be affected by a rising intensity of droughts, flooding and fires. Similarly, warming surface waters and pollution in the oceans, rivers and lakes, as well as sea level rise and melting ice, will adversely affect many fish species.

Conclusions

As the leading manufacturer of food and drink products in the world, the EU food & drink subsector may continue to maintain its competitive position only if it makes proactive efforts to accommodate the current socio-cultural, politico-regulatory, economic and technological changes in the food and drink market being driven by changes in consumer behaviour.

To increase and sustain its global competitive edge, the EU food and drink industry must focus its R&D investments on food types and distribution systems, which meet changing consumer taste/demand as well as diverse government regulatory requirements. The rise of the 'wellness' market, government sugar taxes, diverse innovative and disruptive home delivery services, food deficits in the face of 30% global food wastage, obesity and other global food-related health issues, the increasing requirement for fair pricing along supply chain and source/content traceability, and the overarching societal demand for sustainable production/consumption are some of the major issues the EU food and drink industry must have to contend with in its bid to remain globally competitive. With the shift in consumer demand from processed foods to healthier options, an increasing focus on food security and changing consumer behaviours, manufacturers can develop products which are healthier, use more locally sourced natural ingredients and package them using sustainable material. Labelling and product information are also becoming key to the purchasing decisions of consumers who are looking for natural, organic, healthy foods - food that has not gone through a lot of processing and for which the farmers are paid a fair price.

The imminent withdrawal of the United Kingdom from the EU will impact on the cohesiveness of the single market and consequently the global competitiveness of the EU food and drink sector. However, the EU food and drinks industry may still maintain its leading position by expanding into new markets outside the EU, as well as by producing need-satisfying products using innovative and sustainable processes. Food is an important necessity of life, and a growing world population ensures that its demand shall continue to rise. The changing global requirement of consumers for food products to be produced, preserved, presented and priced in specific manners means that the EU food and drink sector can continue to maintain its global relevance only if it innovates to meet global consumers' specifications.

References

- Data and Trends EU Food and Drink Industry. (2016). Retrieved from http://www.fooddrinkeurope.eu/uploads/publications_documents/Data_and_trends_Interactive_PDF_NEW.pdf
- Dimara, E., & Skuras, D. (2005). Consumer demand for informative labelling of quality food and drink products: A European Union case study. *Journal of Consumer Marketing*, 22(2), 90-100. doi:10.1108/07363760510589253
- ECSIP Consortium. (2016). The competitive position of the European food and drink industry: Final report. Document prepared for the European Commission. Luxembourg: Publications Office of the European Union. Retrieved from <https://publications.europa.eu/en/publication-detail/-/publication/.../language-en>. <https://doi.org/10.2826/039661>. Accessed on July 12, 2017.
- EESC. (2016). EESC permanent study group on sustainable food systems. European Economic and Social Committee. Retrieved from www.eesc.europa.eu/sites/default/files/resources/docs/qe-04-16-973-en-n.pdf. Accessed on June 25, 2017.
- European Commission. (2009). Sustainability report, 2009. Luxembourg: Office of the Official Publications of the European Communities. Retrieved from www.ec.europa.eu/economy_finance/publications/pages/publication15998_en.pdf. doi:10.2765/87726. Accessed on July 10, 2017.
- European Political Strategy Centre. (2016). Sustainability now! A European vision for sustainability. European Commission. Retrieved from www.ec.europa.eu/epsc/publications/strategic-notes/sustainability-now_en. Accessed on July 12, 2017.
- Fairtrade Foundation Report. (2013). How businesses are going further to make international supply chains work for smallholder farmers. Retrieved from <http://www.fairtrade.org.uk/en/what-is-fairtrade/~media/6392909e575d4fae899e2b8ad5803562.ashx>. Accessed on August 2, 2017.
- FIBL-AMI Survey. (2014). Retrieved from <http://www.biofach.fibl.org/fileadmin/documents/de/news/2014/willer-lernoud-schaack-2014-biofach-organic-europe.pdf>
- FIBL-IFOAM-SOEL. (2016). FIBL-statistics. Retrieved from <http://www.fibl.org/en/themes/organic-farming-statistics.html>. Accessed on August 15, 2017.
- FoodDrinkEurope. (2016). A competitive EU food and drink industry for growth and jobs: Ambitions for 2025 - Priorities and policy recommendations. Retrieved from www.fooddrinkeurope.eu. Accessed on June 5, 2017.
- Grunert, K., Hieke, S., & Wills, J. (2014). Sustainability labels on food products: Consumer motivation, understanding and use. *Food Policy*, 44, 177-189.
- Hamm, U., & Michelsen, J. (1996). Organic agriculture in a market economy: Perspectives from Germany and Denmark. In T.V. Ostergaard (Ed.), *Fundamentals of organic agriculture - Proceedings from the 11th IFOAM International Scientific Conference, 11-15th August, Copenhagen, Denmark*. http://ec.europa.eu/growth/sectors/food_en
https://ec.europa.eu/growth/sectors/food/competitiveness_en

- Ilbery, B., Kneafsey, M., & Bamford, M. (2000). Protecting and promoting regional speciality food and drink products in the European Union. *Outlook on Agriculture*, 29(1), 31-37.
- Institute for European Environmental Policy (IEEP). (2013). EU policy options to encourage more sustainable food choices. Commissioned Report. Retrieved from http://www.livewellforlife.eu/wp-content/uploads/2015/06/IEEP-report_withLW-cover-1.pdf. Accessed on June 12, 2017.
- IPSOS MORI. (2008). Sustainability issues in the retail sector. Ipsos MORI, UK. Retrieved from <https://www.ipsos.com/.../reputation-sustainability-issues-in-the-retail-sector-2008.pdf>. Accessed on August 12, 2017.
- Jones, P., Comfort, D., & Hiller, D. (2017). European food and drink wholesalers and sustainability. *European Journal of Sustainable Development Research*, 1(1), 1-12. Retrieved from <http://www.lectitopublishing.nl/european-journal-of-sustainable-development-research>. doi:10.20897/ejosdr.201703. Accessed on June 20, 2017.
- Meredith, S., & Willer, H. (Eds.). (2016). Organic in Europe: Prospects and developments 2016. IFOAM EU Group. Retrieved from http://www.ifoam-eu.org/sites/default/files/ifoameu_organic_in_europe_2016.pdf
- Parrot, N., Wilson, N., & Murdoch, J. (2002). Spatializing quality: Regional protection and the alternative geography of food. *European Urban and Regional Studies*, 9(3), 241-262.
- Reisch, L., Eberle, U., & Lorek, S. (2013). Sustainable food consumption: An overview of contemporary issues and policies. *Sustainability: Science, Practice, and Policy*, 9(2), 7-25.
- Reynolds, J., & Cuthbertson, R. (2014). Retail and wholesale: Key sectors for the European economy. Retrieved from <http://www.eurocommerce.eu/resource-centre.aspx#Publication/7459>. Accessed on August 12, 2017.
- Sanders, J., Stolze, M., & Padel, S. (Eds.). (2011). Use and efficiency of public support measures addressing organic farming. Braunschweig: Johann Heinrich von Thünen Institut.
- Terlau, W., & Hirsch, D. (2015). Sustainable consumption and the attitude-behaviour-gap phenomenon- Causes and measurements towards a sustainable development. *International Journal on Food System*, 6, 159-174.
- Von Hagen, O., & Kasterine, A. (2011). The organic standard in the market for sustainable products. In W. Helga & K. Lukas (Eds.), *The world of organic agriculture: Statistics and emerging trends 2011* (pp. 84-87). Switzerland: Research Institute of Organic Agriculture.
- Wijnands, H. M. J., Bremmers, J. H., van der Meulen, M. J. B., & Poppe, J. K., (2008). An economic and legal assessment of the EU food industry's competitiveness. *Agribusiness*, 24(4), 417-439.
- Willer, H., & Kilcher, L. (Eds.) (2011). *The world of organic agriculture 2012: Statistics and emerging trends 2011*. Switzerland: Research Institute of Organic Agriculture.
- Willer, H., Schaack, D., Lernoud, J., & Meredith, S. (2016). Growth trends in European organic food and farming. In M. Stephen & W. Helga (Eds.), *Organic in Europe:*

Prospects and developments, 2016 (pp. 20-62). Switzerland: IFOAM EU and FIBL. Retrieved from www.ifoam-eu.org. Accessed on August 10, 2017.

World Commission on Environment and Development. (1987). *Our Common Future*. Retrieved from <http://www.un-documents.net/ocf-02.htm>. Accessed on August 15, 2017.

World food consumption patterns - trends and drivers. (2015). Retrieved from https://ec.europa.eu/agriculture/sites/agriculture/files/markets-and-prices/marketbriefs/pdf/06_en.pdf

Wright, C. (2008). Fairtrade food: Connecting producers and consumers. Paper presented to the European Sociology Association Annual Conference, 3-6 September 2007, Glasgow. Retrieved from www.researchgate.net/publication/242566404_Fair_Trade_Food_Connecting_Producers_and_Consumers. Accessed on June 6, 2017.

Zanoli, R., & Naspetti, S. (2002). Consumer motivations in the purchase of organic food: A means-end approach. *British Food Journal*, 104(8), 643-653.