Theoretical Review of Selected Benefits of the New EU Food Strategy
and Sustainability

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Abstract
Agriculture and the food industry face a challenge in 2022 in terms of the sustainability of production and manufacturing. The European Union has approached the issue of sustainability by creating a new food strategy - "Farm to Fork". The new food strategy provides a strategic plan to address the challenges of agriculture and food by 2030 and the gradual adaptation of the European Union's environmental objectives by 2050. Selected factors of the new food strategy are organic farming, which represents the biggest goal of the new food strategy because of its connection to the environmental changes in agriculture, the promotion of uniformed food labelling enabling consumer to make healthy food choices and supporting food safety, and the EU Code of Conduct on Responsible Food Business and Marketing Practices, addressing the objectives of the strategy at the level of the end seller and fair treatment of the consumer of European food.

Keywords: code of conduct, food, food labelling, new food strategy, organic agriculture, sustainability

JEL Classification: Q18, Q53, Q56,

1. Introduction
Climate extremes cause extensive economic damage each year and risks are expected to increase with continued socio-economic development and climate change. As the human population grows and the consumption of animal products increases, so does the pressure on natural resources. Natural resources need to be used with a view to sustainability, which includes the introduction of food systems and strategies that exploit production potential without affecting the long-term sustainability of consumption.

The United Nations 2030 Agenda for Sustainable Development is the most comprehensive set of global priorities to achieve sustainable development to date. Transformation, integration, and universality are key principles of the 2030 Agenda set out in a document approved by the UN General Assembly in September 2015. Agenda 2030 builds on the UN Millennium Declaration of 2000. The Millennium Development Goals (MDGs) were the first ever common vision and the first widely accepted framework for global development and development policy-making. The transformative power of Agenda 2030 is represented by 17 Sustainable Development Goals (SDGs), developed into 169 related sub-objectives, which aim to guide the structural political, economic and social transformation of individual countries in response to the threats facing humanity today. The integration element of the Agenda is reflected in the interconnection of all three dimensions of sustainable development: economic, social and environmental. As part of the new food strategy, the European Union has presented a set of objectives for a sustainable food system, also collectively referred to as the European Union's Farm to Fork Strategy.
Agriculture and food production may move in several directions in the near future. Continuation of the current model (business as usual) where environmental problems will be solved using technical solutions and the development of new varieties and agrochemicals. However, this model faces the difficult problem of increasing production while reducing the carbon intensity of production processes. The setting of the European subsidy policy currently leads to a reduction in biodiversity and the volume of ecosystem services provided does not correspond to the number of payments that enter into the Common Agricultural Policy. The model of optimizing ecosystem services, changing subsidy policies, and changing consumer behaviour is a prerequisite for channelling European taxpayers’ money into measures to promote diversity and ecosystem services. However, this step is difficult to pass politically. It may slow down the trend of reducing the costs we pay for food and, ultimately, may lead to higher prices for some commodities. There is also a lack of a general system for assessing the environmental impact of individual products, so that the consumer can decide to buy suitable products. Retail chains are considered to be causing a great deal of environmental pressure in an effort to reduce the cost of products supplied. Organic farming, technologies based on new dominant crops and minor technologies, hobby farming, community farming and other forms of food production in ways that are environmentally and environmentally friendly also represent a development perspective.

2. Data and Methods

The aim of the presented article was a theoretical review of the objectives of the new food strategy, the determination of the points of the strategy related to sustainability and the theoretical definition of selected factors related to food production, trade, and consumption. Presented article is based on the pillars of food sustainability, the United Nations Sustainable Objectives for 2030 and the European Union's new food strategy - Farm to Fork, with the European Union document communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system- COM / 2020/381.

The authors of the article selected three benefits of the new food strategy - organic food production, food labelling and the EU Code of Conduct. Selected benefits play a significant role in food supply chain and affect consumers behaviour. Therefore, theoretical knowledge of the issue is the basis for future research in the field of consumer behaviour and changes in political and economic conditions in the food sector. To evaluate the research results, we used the methods of theoretical knowledge, comparison of findings with research of foreign and domestic authors, abstracting the facts important for the integration of the presented article into the food sector and summarizing the information being basis for the research of customers and retailers in the future.

Figure 1: Connection of world sustainable strategies

Source: author of the article
3. Results and Discussion

3.1 Organic food production

One of the priority areas of the European Union's new food strategy is to increase the share of organic farming. Organic farmers are not allowed to use chemical pesticides and synthetic fertilisers, the use of GMOs and ionising radiation is prohibited, and the use of antibiotics is severely restricted. All the restrictions that affect organic farming bring consumers healthier, environmentally friendly foods. Research results show statistically meaningful differences in composition between organic and non-organic crops/crop-based foods. Organic products have higher antioxidant activity, contain higher concentrations (18–69%) of a wide range of nutritionally desirable antioxidants/(poly)phenolics and other plant secondary metabolites (which have been linked to a reduced risk of chronic diseases, neurodegenerative diseases, and certain cancers), 75% lower concentrations of agrochemical residues and a 48% lower concentration of Cadmium (Cd), a toxic heavy metal. Concentrations of total nitrogen and toxic nitrogen-based compounds are also lower in organic crops compared to conventional crops (total nitrogen: −10%; nitrates: −30%; nitrites: −87%). Organic vegetables contain up to 50% less nitrates than their conventional counterpart. A higher dry matter content has also been reported for leafy, root and tuber vegetables (Gomiero, 2018). Consumption of organic foods is a positive choice for human nutrition. Also, the consumption of organic food leads to better consumer awareness of packaging solutions, better food choices and ultimately maintaining good health. Consumers look for recyclable packaging when considering buying organic foods (Canio, Martinelli, 2021). European Union citizens value organic products. Based on the 2020 Eurobarometer survey on European Union agriculture and the CAP, citizens believe that organic products are more likely to comply with specific rules on pesticides, fertilisers, and antibiotics (82% agreed), are more environmentally friendly (81%), and are produced with higher respect for animal welfare (80%). According to the survey, 56% of citizens recognise the organic logo, up from 27% in 2017 (eu. Europa, 2022). Proper nutrition of the population, including through organic farming, is therefore a priority of the European Union's new food strategy. The goal for 2030 is to increase the proportion of organic farming in the European Union to at least 25% of total agriculture. The increase in the proportion of organic farming after 2030 is expected to naturally influence the European Union's agricultural decisions, which will aim to further increase the share of organic farming and improve the nutritional capacity of the people of the Member States. The nutritional quality of fruits and vegetables is affected by several other parameters, including the weather conditions, the crop fertilization, or the plant genetic background (Giampieri et. Al. 2022). Therefore, increasing the share of organic farming also has an indirect effect on conventional farming and the quality of food for consumption by consumers.

3.2 Packaging labels and front-of-pack nutrition labelling

The nutrition of the population begins with the right decisions of the legislature, restrictive and supportive measures in the supply chain and growers who provide nutritionally balanced food. However, no initiative can decide for the consumer, who must take care of the right choice of nutritionally balanced foods to achieve a healthy and wholesome diet. The new food strategy aims to make it easier for consumers to make nutritionally balanced food choices. One of the tools to achieve food management decisions is to graphically engage consumers in nutritional management and healthy foods. Within Farm to Fork, the European Union has launched a debate on uniform food labelling. Food labelling has been used in the food industry for decades, but to date the European Union has not adopted a single labelling standard for all Member States. There are currently six labelling schemes in use in the European Union. As part of the new food strategy - Farm to Fork, the European Commission is proposing the introduction of a single food labelling system. The traffic light food labelling system involves labelling foods as red, amber, or green depending on the levels (i.e., amounts) of fat, saturated fat, sugars, and salt. By providing a color-
coding process, healthier food choices can be made by a customer. Customers can easily detect healthy food options by picking fewer red, fewer amber, and more green color-codes on the food packaging. (An, R et al., 2021). Although all front of pack information codes and signs are more efficient than no-label systems, study proves ‘high in’ labels using stop signs and other forms of intuitive symbols, are the most effective format for helping consumers identify foods high in nutrients of concern (Hock et al., 2021). The food industry likes to use food labels to encourage purchase, stimulate brand loyalty and to provide consumers with information about the health and safety aspects of their products. Consumers interested in origin, ingredients but also healthiness of the food like food labelling systems. Labels also provide consumers with information about production process of the food they consume. (Meijer, 2021). The European Commission as a part of new European food strategy supports actions which will lead to healthier food choices of consumers in the EU market. One of the proposed measures is front-of-pack nutrition label. Using a front-of-pack nutrition label is mandatory but there is no recommended type of label to be used by food producers. Initiative will require wider discussions involving stakeholders and impact assessment. The Commission will soon launch an impact assessment on different options for front-of-pack nutrition labelling. TAs indicated in the Farm to Fork action plan; the Commission intends to adopt a proposal by the end of 2022 (Europa.eu, 2022). Front-of-pack nutrition labelling is increasingly seen as a tool to support strategies for the prevention of diet-related non-communicable diseases. It is essential that any additional labelling on the front of the packaging does not diminish the consumer's interest in carefully reading the back of pack information label, which has an "educational" as well as an informative purpose by stating the true product composition, including its ingredients. (SINU 2021,). Research into consumer use of food labelling schemes has proven that if labelling information is to be useful, the same or similar format with the same underlying criteria should be used across all foods (Bunge, 2021). Easy and clear access to the correct information leads to better choices for consumers when following healthy and nutritional diet. Especially older and overweight consumers are more likely to report a need for a front-of-pack label. Nutrition profiling information (e.g. through colours, grading indicators or symbols) allow consumers to make informed nutritional and health conscious decisions. Given the political priority of the European Green Deal and the Farm to Fork Strategy to help consumers choose healthy and sustainable diets, the elements outlined in the Report and the potential of front-of-pack schemes to help consumers make health-conscious food choices, it seems appropriate to introduce a harmonised mandatory front-of-pack nutrition labelling at EU-level. The Commission will prepare a legislative proposal (Europa. Eu, 2022). Even European Code of Conduct objective “a food environment that makes it easier to choose healthy and sustainable diets” presents transparent, voluntary product information to consumers, apply responsible food marketing and advertising practices, promote healthy and sustainable food service practices as a key objective. Easier access to right information for consumer means consumer better choices when following healthy and nutritional diet.

3.3 EU Code of Conduct on Responsible Food Business and Marketing Practices

The EU Code of Conduct on Responsible Food Business and Marketing Practices is one of the first deliverables of the Farm to Fork Strategy and an integral part of its action plan. The Code of Conduct developing process started back in December 2020. The document specifies how diverse types of organisations in the supply chain can improve and communicate their performance of sustainability in the organisation. There are 7 aspirational objectives described, they all are voluntary obligations with actions and monitoring with process to measure progress. In the case of insufficient progress the European Commission will consider legislative measures to be placed in the Code of Conduct. (Europa.eu, 2022). Aspirational objective 1 of EU Code of Conduct is healthy, balanced, and sustainable diets for all European consumers. Aspirational targets have been set for objective No. 1: improved food consumption patterns in the EU and a food
environment that makes it easier to choose healthy and sustainable diets. The following indicative actions have been identified for “improved food consumption patterns in the EU” objective:

a) encourage increased consumption of fruits and vegetables, wholegrain cereals, fibre, nuts and pulses, including locally produced varieties, provide/promote more sustainably produced food products/meals (e.g. sustainably produced organic food; higher animal welfare standards; sustainable fisheries, aquaculture and algae products). Adopting plant-based, or vegan, diets can have a number of benefits, including mitigating climate change, promoting animal welfare, or improving public health (Judge, 2022). The new Food Strategy of European Union is supporting whole supply chain into promoting more vegan diets, which has positive effect on the nutrition of the population.

b) improve the nutritional composition and environmental footprint of food products/meals, e.g., through product reformulation and new product development/innovation, review and/or offer a range of appropriate portion and serving sizes aimed at sustainable food consumption. In order to more effectively assess the sustainability implications of new food products, sustainability methodologies and tools should be applied at the beginning of the new food product development process, and then be continuously used as more information becomes available and data varies over time due to changes in the production processes or the wider food supply chain (Garcia, 2021). More new product development processes that use sustainable organic ingredients directly affects the nutrition of the population through better processed foods. The use of organic ingredients in the preparation of food products directly affects the nutrition of the population through better processed foods. Therefore, consumers who have eating habits based on ready-to-eat products receive fully nutritious foods, in a similar way to the choice of ingenuity of consumers who prefer a home-cooked diet.

c) promote consumer awareness of healthy, balanced, and sustainable diets, including sustainable food consumption, as part of healthy & sustainable lifestyles. Global initiatives to support sustainable healthy diets increasingly focus on integrated actions addressing food systems, food environments, and their influence on diets, nutrition, and health (Reyes, 2021). Stakeholders have opportunities to use behavioural, marketing, or communication theories and conceptual frameworks to guide the design, implementation, and monitoring and evaluation of future diet-related marketing and media campaigns to promote healthy eating patterns (Englund, 2020). Promoting a healthy diet at the time of purchase plays an important role and stakeholders’ involvement through the Code of Conduct is a key. A uniform system for the use of marketing tools in the sale of food with a consideration of a healthy lifestyle is a positive step in a coherent European strategy in the sustainability of agriculture and the support of food businesses.

4. Conclusion

Demands on world agriculture will increase with a growing population. This is a complex socio-economic issue. In essence, the goal of global agriculture in the future will be to produce nutritionally balanced food while reducing the negative effects of agriculture, excessive water consumption, environmental degradation, increased use of agrochemicals and air pollution by greenhouse gases. The global food production system should contribute to reducing greenhouse gas emissions through mitigation measures. The basic principles of mitigation include increased efficiency of crop production, increased efficiency of animal production, use of residual fertilizers, improved food utilization and a lower proportion of animal protein in the diet.

The European Union’s new food strategy faces a major challenge to the sustainability of the food system. Before setting the objectives of the strategy, the countries of the European Union considered the starting position for the new strategy. The diversity of the European Union is also reflected in the ambitions of individual countries in meeting the objectives of the new food
strategy, but each of them sees the strategy as a challenge at some point. Sustainable agriculture, uniform food labelling and code of conduct demonstrate the Union's broad-based approach to the new food strategy. It is a strategy that has a solid foundation in agriculture, defines food security, distribution, stimulates population health and fair trade. All this with a view to reducing the impact of food production on the environment, thus supporting SDG 2030 in the field of sustainability.

Before continuing to research the benefits of a new food strategy with consumers and supply chain, it is important to realize that the benefits of the new food strategy are still not uniformed across the Union. This is due to the complexity of implementing the new food strategy, which will have a clear positive effect on agriculture and food industry in the future but is now a challenge for every country in the European Union. In the future, research into the benefits of new food strategy therefore needs to focus on the consumer and his understanding of the benefits of the new food strategy. It will also be important to explore the priorities of the new food strategy for retailers and the whole supply chain.

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