

## SUSTAINABLE GASTRONOMY – A MODEL APPROACH

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**Purpose:** The aim of this paper was to define the concept and dimensions of sustainable gastronomy.

**Design/methodology/approach:** The article uses the method of critical literature analysis as well as the method of synthesis and logical inference.

**Findings:** The article proposes the author's definition of sustainable gastronomy, drawing attention to the necessity of taking into account all three areas of sustainable development (economic, social and ecological), thinking in the perspective of future generations and cooperation of various entities operating within the gastronomy sector, as an important condition for the implementation of the principles of sustainable development in this area. The proposed model of sustainable gastronomy, based on the three classic dimensions of sustainable development, refers to the most important activities that should create this type of gastronomy.

**Research limitations/implications:** The considerations and conclusions are theoretical, and they are based on the analysis of publications available in full-text form in the e-collections and online catalogue of the University of Gdansk Library and Google Scholar.

**Practical implications:** The conclusions presented in this paper may be a suggestion for the legislator, local authorities and companies from the catering industry regarding the directions of activities related to the development and promotion of sustainable gastronomy. They can be used to conduct a self-assessment of catering establishments, and its results can be used to strengthen competitive advantage.

**Social implications:** The considerations and conclusions presented in the article may contribute to raising public awareness of the specifics of sustainable gastronomy, and thus contribute to buyers making more informed decisions regarding the choice of gastronomic offer.

**Originality/value:** The article is dedicated to the issue of sustainable gastronomy, which is relatively rarely subject of the research. Furthermore authors propose definition of sustainable gastronomy along with its model.

**Keywords:** sustainable development; gastronomy; sustainable gastronomy.

**Category of the paper:** conceptual paper.

## 1. Introduction

In recent years, there has been a trend towards the dissemination of sustainable development principles in various areas of the economy. One of them is the agri-food industry in its broadest connotation.

Food serves to satisfy basic human needs, therefore the food industry and the products it provides play a key role in terms of society's ability to survive and prosper. This industry includes various types of entities that produce, process, manufacture, sell and serve food, beverages and dietary supplements (Akyazi et al., 2020). Many sectors, which are part of the food industry, are the subject of studies proposing solutions for their sustainable transformation. According to the authors, in this context, publications on catering and how it can be adapted to sustainability are relatively limited.

The implementation of sustainable development principles in the field of gastronomy has not only a sectoral dimension, but also a regional one. Indeed, gastronomy contributes to the local economy, supports the development of industries such as tourism, and helps to preserve local traditions and identity. Thus, sustainable gastronomy can be an important element in building sustainable regional tourism products (Scarpato, 2002).

The aim of this conceptual paper is to attempt to define the concept and dimensions of sustainable gastronomy. The proposed concept of sustainable gastronomy is presented as a model approach.

The research was based on the method of critical analysis of the literature and the method of synthesis and logical inference. The literature review was conducted in November and December 2023, using the EDS scientific browser, which allows integrated searching of the e-collections and online catalogue of the University of Gdansk Library and the Google Scholar database. The literature review included publications in English or Polish, available in full-text and peer-reviewed.

## 2. Idea of sustainable development

The concept of sustainable development is one of the most important ideas presented in socio-economic reality today. As with many such concepts, it is not easy to find its origins. A review of the literature on the subject reveals that some authors go back to the very distant past, arguing that, almost from the beginning, people understood how much their fate and lives depended on their relationship with the environment (Barrow, 1995; Du Pisani, 2006). As an important milestone, from the point of view of the development of the concept of sustainability, we can also point to the 18th century economist Thomas Malthus' reflections on

the challenges of ensuring that a growing human population can be fed (Tauzon et al., 2013). Another event related to the development of this concept that is mentioned in the literature is the publication of *Sylvicultura Oeconomica (Forest Management)* in 1713 by the chief mining administrator in Saxony, Hans Carl von Carlowitz, in which he advocated a sustainable approach to forest management (Michelsen et al., 2016; Spindler, 2013). A large number of authors consider the United Nations Conference on the Human Environment held in Stockholm in 1972 as a moment that can be taken as the symbolic beginning of the development of the idea of sustainable development, during which issues relating to the need to protect the environment in the context of development challenges for the world were enshrined in official documents (UN, 1973). The conference coincided with the publication of the Club of Rome report *Limits to Growth*, which drew attention to the problem of depletion of the world's natural resources (Meadows et al., 1972). The aforementioned conference can be considered to have started the process of development and dissemination of the idea of sustainable development, with the following milestones:

- The United Nations Conference on Environment and Development (Earth Summit) in Rio de Janeiro in 1992, which was ground-breaking and culminated in the adoption of the Rio Declaration on Environment and Development (UN, 1992b) and Agenda 21 (UN, 1992a).
- The Millennium Summit in New York in 2000, which defined the tasks facing the world and embedded them in the framework of sustainable development - these took the form of the 8 Millennium Goals (UN, 2000).
- The World Summit on Sustainable Development in Johannesburg in 2002, which placed a slightly greater emphasis than before on social problems, including social inequalities (UN, 2002).
- The United Nations Conference on Sustainable Development in Rio de Janeiro in 2012, which took stock of the results to date in making sustainable development a reality (UN, 2012).
- The UN Summit on Sustainable Development in New York in 2015, which adopted a new, modified list of tasks, this time in the form of 17 Sustainable Development Goals (UN, 2015).

Sustainability is defined in different ways. The definition most often referred to by both authors of scientific publications and other studies in this field is the one proposed in the *Our Common Future* report, also known as the Brundtland report (after the chairwoman of the World Commission on Environment and Development who prepared the study). According to it, sustainable development is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED, 1987). Integral to the concept of sustainability are its dimensions. There are various proposals in the literature for their number, ranging from as few as two to as many as eight dimensions (Michelsen et al., 2016). By far the most widely accepted, both in academic works and other studies, is the concept

of sustainability based on three dimensions: economic, social and environmental (Dziadkiewicz et al., 2022; e.g. GRI, 2022; Rogall, 2010; Schaefer, Crane, 2005; Wisniewska, Grybek, 2022). In the context of the dimensions of sustainability, two different approaches to their importance and hierarchy can also be observed: unidimensional - where one dimension is prioritised - and multidimensional - where all dimensions are treated as equivalent (Michelsen et al., 2016).

As mentioned, the most popular approach is one in which sustainability is based on economic, social and environmental pillars. Each pillar has its own specificities, challenges and objectives. The economic dimension focuses on economic development in the broadest sense, the determinants of which are: economic growth linked to increasing the wealth of societies; the creation of jobs that provide decent wages; increasing the availability and improving the infrastructure necessary for business and society to function; increasing the availability and efficiency of energy use; the efficient use of raw materials and materials; innovation to meet social needs and protect the environment. The social system, in line with the principles of sustainable development, should be built around values such as human rights; the well-being of individuals and societies; equality and the fight against exclusion; decent working and living conditions; access to public services or respect for consumer rights. Within the last pillar, the ecological one, actions are advocated to: protect the climate, including by reducing the carbon footprint; protect water resources and ensure their availability to all; manage natural resources sparingly, including non-renewable resources; reduce waste and harmful emissions to the environment; and protect biodiversity (Duran et al., 2015; Rogall, 2010; Strezov et al., 2017; UN, n.d.). It is worth noting that the indicated pillars of sustainable development are closely interrelated, and the assignment of a challenge to one of the three dimensions: economic, social and environmental, is often conventional (Giddings et al., 2002). This is the case, for example, for human well-being, which can depend on various factors, including economic and environmental ones.

In the aforementioned document - Agenda 21 - there were passages indicating the need for profound changes in the operating model of entire segments of the economy (UN, 1992a). This has resulted in contemporary references to concepts such as sustainable agriculture (e.g.: Farooq et al., 2019; OECD, 2022; Velten, 2015), sustainable tourism (e.g.: Hardy et al., 2002; Meuser, von Peinen, 2013; Stoddard, 2012; UN WTO, 2013), sustainable transport (e.g.: Gudmundsson et al., 2016; UN, 2021), sustainable trade (e.g.: Vadakkepatt et al., 2021) or sustainable fashion (e.g.: Henninger et al., 2016; KPMG, 2019; Niinimäki, 2015). In each of these cases, the aim was to bring about changes that will reduce the negative environmental impact while increasing the positive social impact of these sectors.

### 3. The concept of gastronomy

The gastronomy term was coined from a combination of two Greek words: *gaster* - stomach and *nomos* - law, and defines the art of eating well (Dominik, 2008, p. 5), encompassing everything related to human nutrition (Brillat-Savarin, 1973, p. 36).

One of the more comprehensive definitions of gastronomy, states that it is a separate organized economic activity in the social division of labour, consisting in satisfying the nutritional needs of consumers through the processing of food raw materials, resulting in ready-to-eat food and beverages, offering them to consumers, creating conditions that allow their consumption at the point of sale and providing a variety of services to meet the needs for entertainment, rest, mental regeneration (Sala, 2011, p. 12).

The gastronomy business is one of the branches of the service sector that is growing quite intensively. This is influenced, for example, by the development of tourism services, growing urbanisation, increasing female participation in the labour market, population migration (Czarniecka-Skubina, Głuchowski, 2018; Sio et al., 2021), as well as the intensification of the pace of life and the creation of new patterns of spending leisure time, most often outside the home (Kwiatkowska, Levytska, 2009). It is important to note the existence of constraints on the development of these services, as occurred during the COVID -19 pandemic (Yeast, 2022). Many catering establishments were closed at the beginning of the pandemic, and over time had to adapt to the new conditions, introducing takeaway delivery services and adapting to strict sanitary requirements.

Currently, the situation in the gastronomy market is slowly recovering. In 2021, the total number of catering establishments in Poland was approximately 74.2 thousand, an increase of 15.1% compared to 2020, and in 2022 there was a further increase in the number of establishments to 83.9 thousand, which is more than before the outbreak of the pandemic. The sector's revenues at current prices, in 2021, amounted to PLN 48.7bn, up 29.3% on the previous year (at constant prices, they were 21.6% higher), with a further increase to PLN 64.6bn in 2022 - again, a level of revenues above the pre-pandemic level (PLN 50.9bn in 2019) (GUS, 2022; 2023). The high revenue growth was mainly due to a much shorter period of activity restrictions related to the COVID-19 outbreak than in 2020. However, some barriers can also be noted that lead to a hindrance to the strong growth of this market. This is primarily inflation, with more and more Poles deciding to cut back on spending due to rising prices. In an illuminating study by PMR, it appears that 66% of respondents have cut down on visits to catering establishments and 63% of respondents order takeaway food less frequently (Lemberska, 2022). In addition, factors inhibiting a rapid post-pandemic revival of the sector include the high cost of running premises and the cost of employing staff (Zagórska, Filip, 2022).

Nowadays, it can be emphasised that gastronomy is not only concerned with the art of food preparation but also with its relations with other areas of life, e.g. at the social, cultural, health and environmental levels. Catering services have a significant impact on shaping the consciousness of consumers, by influencing their cultural, social or economic aspects of life. Catering establishments themselves can be a meeting place, fostering the development of communication, strengthening relationships. They can be an integral part of social and cultural events, such as festivals, events, and can also play an educational role by informing customers about healthy eating, the origin of food and sustainable food practices. An increasing number of catering businesses are committed to promoting sustainability by minimising food waste, using local and seasonal produce and adopting organic practices. Catering services can also play a role in promoting social inclusion by offering access to food for different groups, such as those with disabilities.

The catering industry is characterised by certain features, such as volatility. It is an industry that reacts quickly to changes in consumer trends, the seasonality of products and the period of operation of establishments and culinary innovations. On the other hand, it is important to take into account the dynamics of changes in legislation or in trends created by social media. As consumer awareness of sustainability, food ethics, healthy eating increases, catering businesses need to modernise, expand their business strategies.

Looking through the prism of the changes taking place and assuming that the development of services in the 20th century oscillated around level 2.0, it can be suggested that nowadays, in order to meet social, economic and environmental challenges, we can speak of another level of food service activity (3.0), which, among other things, is based on food production and consumption in the light of the laws of ethics and sustainability.

#### **4. Sustainable gastronomy concept**

The concept of 'sustainable gastronomy' is relatively rare in the literature. The approaches to the term encountered there tend to emphasise selected aspects, related to sustainability. The concept of sustainable gastronomy does appear in the sustainable tourism literature, where attention is given to gastronomy services as an integral part of the tourism offer, especially in the context of place as a tourism product (Table 1).

**Table 1.***Selected approaches to sustainable gastronomy concept in literature*

Definition/description	Source
Sustainable gastronomy encompasses the production of environmentally responsible food that appeals to both people's minds and their food.	(Scarpato, 2002)
Sustainable gastronomy focuses on producing food in a way that is not harmful to the environment or health. It also emphasizes preserving the traditional gastronomic heritage, passing it on to future generations and bringing local gastronomic products to light.	(Arslan et al., 2023)
Food and gastronomy seen as elements that can contribute to an economically, socially and economically sustainable place, while increasing its attractiveness and competitiveness.	(Rinaldi, 2017)
Sustainable gastronomy takes into account how it can be incorporated in a manner that is beneficial for the planet and society.	(Richardson, Fernqvist, 2022)

Source: Own elaboration.

Based on the above statements, it can be assumed that sustainable gastronomy should focus on minimising negative environmental impacts, promoting the social and economic well-being of the internal and external customer and the service provider. With these aspects in mind and based on the emerging understandings of gastronomy, sustainability and its dimensions, and gastronomy incorporating sustainability principles in the literature, the following definition of sustainable gastronomy can be proposed:

*Sustainable gastronomy is a business activity focused on meeting the nutritional needs of consumers based on the processing of food raw materials into ready-to-eat food and beverages, and offering them to purchasers, also by making them available for consumption at the point of sale (with additional services to meet other needs, e.g. entertainment, leisure), which:*

- *takes into account the need to act in the spirit of sustainable development, by applying solutions that favour the economic objectives of the operators and the region, enable the achievement of social objectives and improve the well-being of individuals and communities, and contribute to limiting negative effects on the environment;*
- *takes a long-term view, also taking into account the well-being of future generations;*
- *is based on interaction between different stakeholders.*

In order to highlight the essence of the above definition of a gastronomy, whose activities have an impact on the implementation of sustainable development, it is possible to present the identifying characteristics of the ecological, economic and social dimensions with which it should be characterised in this context.

The most common reference in the literature is the relationship of gastronomy with the wider environment, through the use of raw materials from periodic sources, such as certified sustainable fisheries or organic farming (Nuñez et al., 2023). When analysing the impact of catering operations on environmental pollution, it is important to consider the possibility of reducing energy consumption. In this case, reducing transport by focusing on local vendors can play a significant role. The use of local products contributes to reducing the carbon footprint (Bell, Horvath, 2020), besides being an excellent instrument to support the development of local economic activities. The aspect of resource management, e.g. water and energy during the food

preparation process, also draws attention (Malinowska, Szymańska-Brałkowska, 2020, pp. 144-166). The actions of staff who are aware of the need to save resources are important, as well as continuous improvement through the organisation of periodic training. In addition, some reports (cf. Nuñez et al., 2023) show how important it is to preserve biodiversity. Its preservation can lead to far-reaching negative phenomena that can threaten the population and the economy, as well as the proper functioning of the planet's processes (Gorka, 2021).

Another aspect that deserves to be highlighted in the context of sustainable catering is the management of supplies and the related management of stocks and waste. Rationalising the activities of the procurement process involves a meticulous estimation of the products needed and which will be consumed on an ongoing basis. A suitable method, although not always feasible, may be: just in time (cf.: e.g. Ralahallo, 2021). If stocking is too high, then this can lead to waste (Lévesque et al., 2022). Effective inventory management, thoughtful meal planning and use of leftovers can significantly reduce the amount of food wasted (cf.: Malinowska, Szymańska-Brałkowska, 2018).

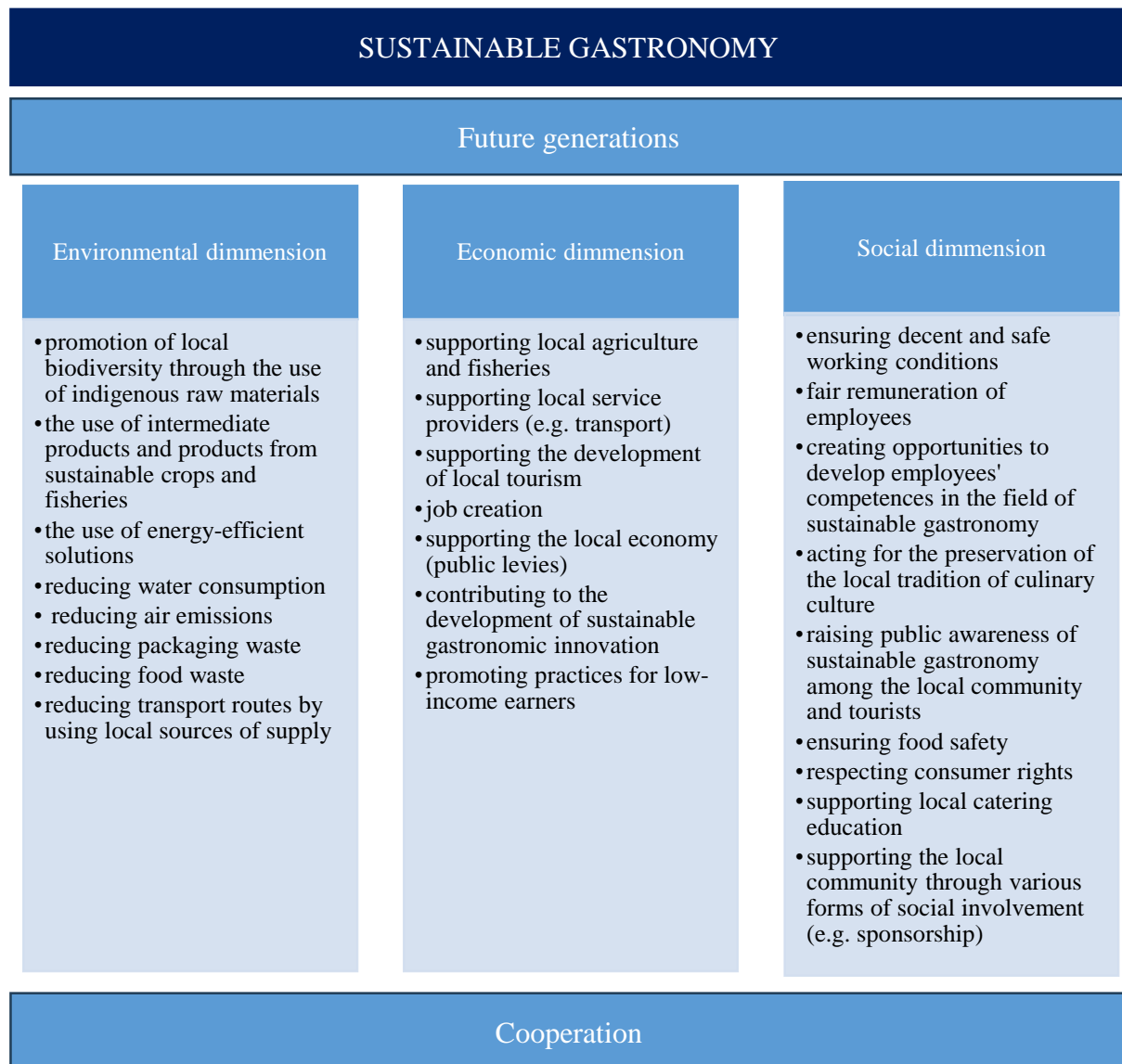
Sustainable gastronomy concept also takes into account aspects of social responsibility and cultural equality by ensuring fair, decent working conditions for all workers throughout the catering process chain and paying them fairly. Packaging management, reducing the use of plastic and other non-organic packaging materials in favour of reusable or biodegradable ones, is also extremely important.

As can be seen, current considerations of sustainable gastronomy in the literature mainly concern ecological aspects. It should be emphasised that two more dimensions are important in a sustainable approach: the economic and social dimensions, which must be considered together with the ecological dimension. Therefore, in the authors' opinion, a more holistic view of the idea of sustainable gastronomy is justified, as presented in Figure 1.

The presented model contains all the elements indicated earlier in the proposed definition of sustainable gastronomy: long-term thinking, also taking into account the interests of future generations; action in three areas: ecological, economic and social; the necessity of cooperation of various stakeholders related to gastronomy.

As the above considerations show, gastronomy cannot be treated as a separate element of the economy. Together with other sectors, it has a significant impact on shaping a socio-economic and ecological order whose task is to meet not only the current needs of the environment and stakeholders, but also the future ones. That is why it is necessary to take a close look at the activities of catering organizations today and analyze whether they are in line with the policy of sustainable development. A control tool could be proposed, which could be a self-assessment sheet to determine the extent to which the individual characteristics of sustainable gastronomy are met by the currently operating catering establishments.





**Figure 1.** Sustainable gastronomy model.

Source: Own elaboration.

## 5. Conclusions

Gastronomy is an organized economic activity separated in the social division of labor, which consists in satisfying the nutritional needs of consumers through the processing of food raw materials, resulting in the production of ready-to-eat food and beverages. The perception of this activity in the form of a catering service is based on the characteristics of its duality: material factors (raw materials and food products from which beverages and dishes are prepared, as well as those elements without which the catering establishment itself could not exist) and intangible factors, e.g. the time of preparing meals, the way of accepting and fulfilling orders, as well as relaxation and rest, the atmosphere in the facility, hospitality, friendliness,

the opportunity to participate in entertainment etc. (Martin, 2006; Stasiak, 2007). Both the material features and the human activities that make up the service itself are the basis for its impact on the external environment, which is constantly changing in the current era of development. To ensure that these changes do not go in the wrong direction, or to minimize their negative effects, decisive steps should be taken. This is the direction in the concept of sustainable development, which serves as a guide for customers, suppliers, entrepreneurs and other stakeholders. Many sectors of the economy are trying to implement principles that are determined by the potential for sustainable development. The broadly understood catering business should also follow this direction and within the framework of the 3.0 concept, not only use advanced technologies of food preparation to encourage consumers, but also be guided by the requirements of sustainable development in order to be able to serve more and more conscious consumers and function in the future.

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