

Article

Nature on a Plate: Linking Food and Tourism within the Ecosystem Services Framework

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Abstract: This paper explores the links between local resources (the natural environment) and the local food on offer; i.e., what parts of nature reach the tourist's plate. It is based on a content analysis of restaurant menus in the Great Masurian Lakes region, which is considered to be one of the main nature-based tourism destinations in Poland. The concept of Ecosystem Services (ES), closely interlinked with the idea of sustainable development, is employed as it recognizes the relationships between humans and the natural environment. The results indicate that food representing the region's history is almost non-existent. Instead, the local food heritage is being reinvented based on the area's iconic ES, i.e., wild food. In this way, the supply side of the ES cascade (ecosystem resources and potential) and its demand side (the benefits for tourists and the costs they pay to obtain these benefits) are encompassed on a tourist's plate in Masurian restaurants. The findings also reveal that, in many cases, the localness of "local" food is an illusion. This, in turn, poses an important challenge for the sustainability of food (and) tourism in the studied area.

Keywords: local food; restaurants; cultural ecosystem services; provisioning ecosystem services; heritage; sustainability; ES cascade



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1. Introduction

Food is one of the most important elements in the tourism system. OECD statistics show that, in many countries, tourist spending on food and beverages is even higher than on accommodation services, which has traditionally been regarded as the biggest item of expenditure. This is not just because tourists have to eat, but also because food is an essential part of their experience [1–3]. For some, it is even their primary reason to travel. Hall and Sharples [2] capture this behaviour, and the selection of a destination that is influenced by an interest in food, in the term *food tourism*. They argue that it offers significant potential to reinforce sustainable local development because food tourism "is quite literally the consumption of the local and the consumption and production of place" [2] (p. 10).

In addition to its role as an element of sustainable tourism, food has a wide range of implications for sustainability in general, in terms of both production and consumption [4]. The provision and characteristics of local food supply is a key issue for sustainable development, for several reasons. Firstly, close links between local producers and tourists have the potential to benefit local residents by keeping tourist expenditure in the host economy [5,6]. This is particularly relevant in the case of poorer and peripheral areas, or rural destinations, where local food products may act as differentiators for places that do not otherwise have any flagship attractions to offer [7]. Secondly, local food has the potential to mitigate the effects of climate change and tourism's carbon footprint [4]. Consuming local food may reduce energy consumption by shortening supply lines and preserving (agro) biodiversity [8]. Thirdly, local food can make a significant contribution to preserving the landscape and local culinary traditions. In this context, it helps sustain local and regional identities [2], together with traditional food practices and heritage [9]. In advanced consumer cultures

there is also a growing inclination to obtain food at, or near, the source of production [10]. This demand has been described as one of several innovative, emerging trends in the world of gastronomy and tourism that are significant for sustainability [11–13].

In nature-based tourism destinations, local food is connected to the natural environment and its resources. It can be wild food, foraged from forests, or processed food based on local products. In many European Union (EU) countries (including Poland), wild food is important in traditional cuisine [14]. Moreover, it can be a central component in the meanings that local communities in rural and natural areas attach to place [15]. Furthermore, there is an emerging trend that involves rediscovering and re-creating lost, traditional knowledge about wild food by “the gastronomic and intellectual elite in the search for new stimuli, culinary experiences, and health food” [16] (p. 365). The increasing presence of wild food products can also be seen in agritourism farms or local, rural eateries that offer a traditional heritage experience, as well as avant-garde restaurants [16]. Thus, wild food can provide not only nutritional, but also economic and cultural benefits to humans.

Although there is a large body of literature on food, and its meaning for the tourism sector and the tourist experience, the relationship between local food and tourism, especially in the context of sustainability, remains relatively unexplored in comparison with other topics [17]. As Gössling and Hall [18] (p. 36) note, “what has been relatively absent is the examination of how tourism does or can contribute to the sustainability of food and foodways”.

The purpose of this paper is to understand the relationship between local resources (the natural environment) and the local food on offer, by investigating what parts of nature reach the tourist’s plate. The paper addresses this problem by employing the concept of Ecosystem Services (ES). The latter concept is closely interlinked with the idea of sustainability and attempts to explicitly recognize linkages between humans and their environments and include these considerations into decision-making [19]. Such an approach responds to the increasing need to understand the interplay between the physical and the social in the origin and production of foods [20], especially in a tourism and hospitality context. The results are drawn from a study of restaurants operating in the Great Masurian Lakes region, in north-east Poland. The region is a popular, nature-based tourism destination. The main attraction is the beauty of the landscape, which features many large and small, separated and interconnected lakes, accompanied by a mosaic of forests, fields and meadows. The paper examines the wild food that is offered in the region’s restaurant sector, and examines if, and how, local nature is “supplied” to tourists. This research is based on a content analysis of menus of restaurants operating in the region. The study also examines whether the “local” food that reaches the plate reflects the global trend towards natural, healthy and locally-based food, or whether it is just a label that is applied to what is on offer. The results contribute to the discussion on the relationship between food and the natural environment, especially in relation to the role of tourism, the gastronomy sector, and sustainability.

2. Conceptual Framework: Local Food, Tourism and Ecosystem Services

2.1. Food and Tourism within the Ecosystem Services Framework

Ecosystem Services (ES) describe the services provided by nature and used by humankind [19]. Although the foundations of this concept were laid in the 1960s, its popularity has grown significantly since the 1990s. Its attractiveness is based on its integrative, interdisciplinary and transdisciplinary character, as well as the ability to link environmental and socio-economic elements [21]. Three groups of ES are usually distinguished: provisioning services (such as food, energy production), regulation services (such as erosion control, carbon sequestration), and cultural services (hereafter CES; such as tourism and recreation, well-being, spiritual or symbolic interactions with the natural environment) (see for example [22–24]). The latter group, which include tourism and recreation as a subgroup, is characterized by ES which, unlike the other two group, embody intangible non-material values [25–27].

In the case of tourism, and food tourism in particular, the situation is much more complex. Tourists consume food not only for “spiritual enrichment, cognitive development, reflection, recreation and aesthetic experiences” [23], which are non-material and intangible benefits provided by ecosystems and defined as CES, but also in order to satisfy their hunger, which is a very material benefit. As Chan and Satterfield [28] (p. 343) observe, “in some social-ecological systems, provision services are so important locally precisely because they are the conduits for CES”. The latter observation is also in line with the argument put forward by Fish et al. [26], who note that environmental spaces both enable, and are shaped by, cultural practices. The four types of cultural practices they distinguish include “gathering and consuming” (e.g., consuming food and drink of local provenance, collecting wild food), which ties cultural benefits to a biophysical production context [24]. In many tourist destinations, CES create demand for provisioning; in many others it is the attractiveness of the provision that draws tourists and stimulates CES (e.g., [14,15]). Thus, the relationship is complex and multi-layered [28].

Haines-Young and Potschin [29] proposed the ES cascade to capture the idea of a casual chain that links natural structures and processes within the resource system, on the one hand, and elements of human well-being, on the other. The advantage of this concept is that it highlights societal dependence on ecosystems: “the key point is that there is a cascade linking the two ends of a ‘production chain’” (p. 115). The cascade underlines the essential elements that have to be considered in any analysis of ES, and the relationships between them [30]. Figure 1 shows that the provision of food is one ecosystem service. Different ecosystems (e.g., lakes, forests) have different potentials to deliver food, as availability depends on the specific characteristics of the ecosystem. Food, once delivered, can benefit people in a number of ways: not only can it satisfy hunger and maintain health (provisioning ES, shown in dark green on Figure 1), but it can also provide the satisfaction of eating local products, or broaden the tourist experience (CES, shown in red on Figure 1). These benefits may influence interest in collecting food from a local ecosystem. It is especially important to note that tourism integrates different functions and meanings of ES. The central point of this “production chain” [29] (p. 115) is the delivery of ES, which encompasses both the ecosystem’s resources and its potential to satisfy hunger, on the one hand, and human well-being, on the other hand. In this paper, ES are delivered in a restaurant.

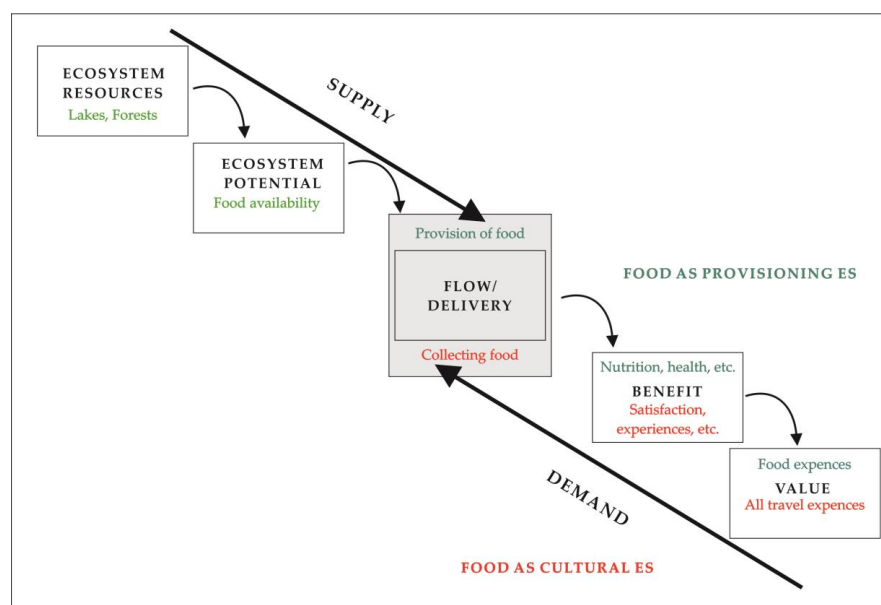


Figure 1. Food in the Ecosystem Services (ES) cascade model (adapted from [30,31]). The main aspects covered in this paper are shown in grey.

2.2. Local Food in a Nature-Based Tourism Destination: Linking Provisioning and Cultural ES

Tourists consume food from all types of ecosystems, ranging from non-managed (e.g., deep-sea fish), through lightly-managed or wild ecosystems (e.g., venison, mushrooms, aquaculture), to heavily human-managed row-crop agricultural systems (e.g., wheat, corn, rice) [32]. On the global scale, most tourists are supplied by human-dominated food production ecosystems, which produce most calories worldwide. Nevertheless, interest in eating wild food, or food that comes from less managed, and more sustainable ecosystems, is growing [15,33]. The latter is the result, among other reasons, of increased awareness of environmental and health issues, along with a search for identity, tradition and authenticity in the tourism experience. Local food is at the heart of low-intensity food production systems. As Anderson and Cook [34] note, local systems cannot be expected to replace larger-scale agricultural production and trade as the world's primary source of food. They can, however, "supplement and complement larger-scale food systems in urgently needed ways", and help to "bring global food production, and overall social and economic development, closer to sustainability [34] (pp. 244–245).

Local food is a socially constructed concept, i.e., it can vary according to a person's beliefs and circumstances [17,18]. There is no single, accepted, definition of it. Herzog and Murray [13] underline the diversity and complexity, not to mention the confusion, regarding its meaning. Nevertheless, it is an increasingly important component of food branding, promotion, purchase and understanding [11]. Drawing on the discussion in Sims [17], in this paper local food is understood in terms of a bounded region within which products are produced and sold. As Schnell [35] suggests, the key aspect of local food is its tie to place; it is part of local food systems, also called alternative food systems. According to Kim and Eves [36], tourists consume local food for a number of reasons, notably related to the cultural experience, interpersonal relations, sensory appeal and health concerns. Potential benefits of consuming local food include environmental and social sustainability, enhancing food security, better food quality and freshness, support for the local farming economy, as well as the well-being of individuals and communities [11,17]. These benefits apply to both producers and consumers, including tourists.

In nature-based destinations, local food is, per se, based on wild or lightly-managed ecosystems, with low-intensity production systems. Figure 2 illustrates this spectrum on the x-axis. To the left, there is wild food, which is defined as plants, berries, fruit, nuts, mushrooms and game that are collected in the wild, and consumed as food or drink [14]. This function can be understood as an iconic ES [14]. Although it is commonly included as a provisioning service in ES classifications [23,24], wild food also has a cultural value. First, it plays a key role in the traditional cuisine of many countries and regions worldwide. Second, collecting wild food is an important recreational activity [14,15], and a way of connecting people with the natural environment. As Lund et al. (2008, after [37]) find, foraging for foods such as nuts, mushrooms, berries, herbs, and fruit, enhances the meaningfulness and value of the visitor's experience, whether the products are eaten on location or taken home.

At the other end of the spectrum are products derived from lightly-managed ecosystems, i.e., low-intensity food production systems (the right side of the X-axis in Figure 2). These products are present in areas that lie in between natural and rural areas. As Bessière [1] notes, tourism in rural areas seems to have become influenced and idealized by the myth of nature, and is often related to an unrealistic perception of the countryside. According to Galford and Ricketts [32], this applies to many of the world's pastures and croplands, although they call it "the delicate trade-off between provisioning of food and sustainability".

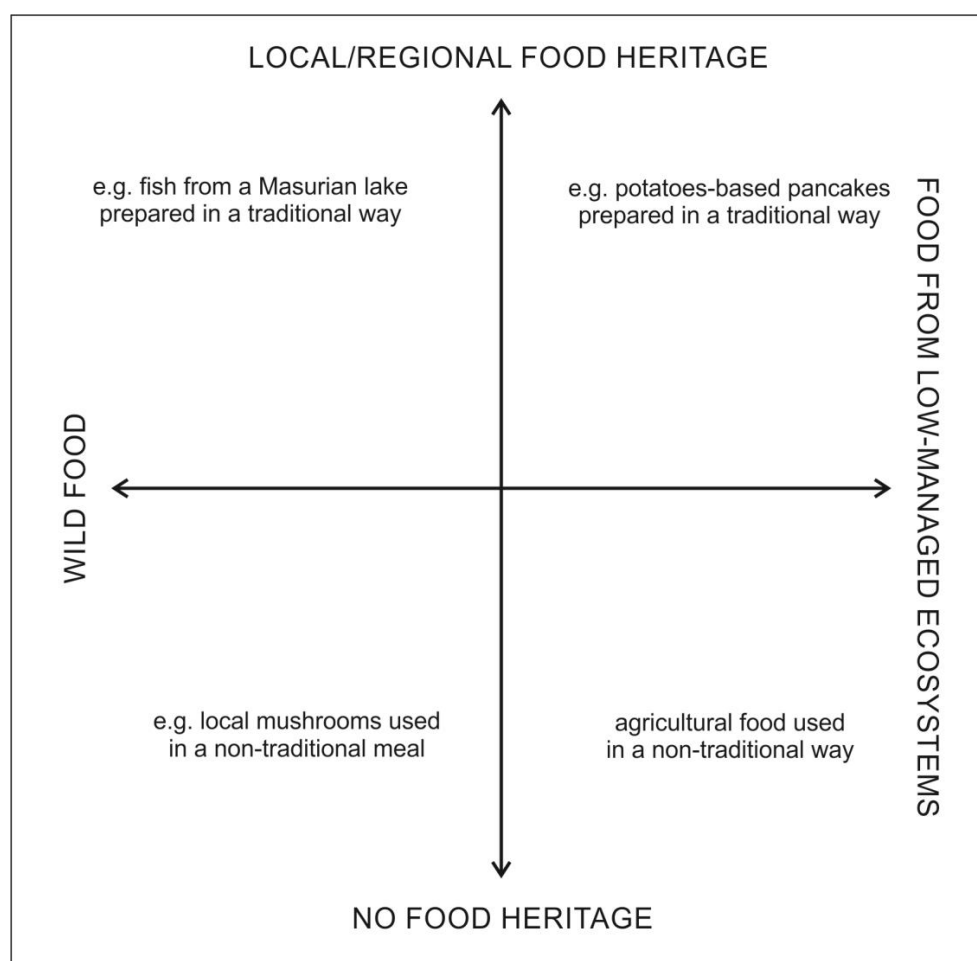


Figure 2. Local food in nature-based tourism destinations situated in terms of the relationship between the type of ecosystem and food heritage. The spectrum that is examined in this paper does not cover highly-managed ecosystems. The latter are inconsistent with the idea of local food, but should be taken into account if the whole continuum, ranging from wild food to highly-managed, is analysed.

2.3. Local Food and Heritage

Local food can be defined not only as food made from local ingredients and products, as heritage also plays an important role. According to Bessière [1], heritage must be legitimized in order to be genuine; in other words, the historical content, origins and roots, which are the most important conditions for a successful heritage market, must be beyond doubt. Although this can be easy to establish in regions with a relatively stable, continuous history, the more turbulent the history, the more complicated (and susceptible to revision) heritage becomes. Current approaches focus on a present-day-centred understanding of heritage, noting that it is open to constant revision, and “envisaged as having moved along a continuum from the preservation of what remains, to the maintenance, replacement, enhancement and facsimile construction of what might, could or should have been” [37] (p. 40). This perspective opens up a wide range of possibilities in terms of understanding (and selling) heritage, including the heritage of food.

At the local level, food heritage is usually based on the availability of natural resources, present or historical, as well as local people’s attitudes to nature. Pre-modernity environmental determinism is, therefore, an intrinsic element of food in terms of its regional identity: over time, changing environmental conditions shape food production, which, in turn, shapes local traditions with respect to cooking and eating. Galford and Ricketts [32] note that cuisine, or the style of cooking, is largely reflective of the foods available in a

region, ranging from the crops grown and animals farmed, to wild foods that are foraged. In rural areas, the culinary heritage is strongly linked to a peasant identity, specific eating habits and food production [1]. Cooking, as Levi-Strauss (1964, 1968; cited after [38]) notes, is the human passage from nature to culture, while cuisine, as Timothy [39] (p. 180) observes is, in turn, “a rich and varied keeper of the past, a veritable archive of information about evolving human relations and forces of nature”.

Local food heritage is shown on the *y*-axis of Figure 2. It can either be based on wild food, traditionally foraged from nature, or on lightly-managed ecosystems. Fusté-Forné [15] gives the example of mushroom heritage in the Catalan Pyrenees and argues that collecting wild mushrooms is a local tradition that pays tribute to the forests. Apart from a way to connect with nature, the author notes that mushrooms are a product used in the local restaurant sector, and that home-based cuisine is full of recipes that use mushrooms. Another example comes from the Inuit people, and illustrates the food heritage of contemporary foraging. As Searles [40] notes, the Inuit forage for food, but also for identity and heritage. They consider their food to be the very same foods prepared and consumed by their ancestors many thousands of years ago. Kuyait, one of the camps located along the shores of Frobisher Bay, where Searles [40] carried out his research was, for them, more than a place that had excellent hunting and fishing opportunities; it was a place “where one could experience *inuktitut*, ‘the Inuit way’, in all of its gory glory and grandeur” (p. 28). In this case, the local food heritage, based on hunting, fishing, trapping and gathering, is a part of the personal heritage and an element in maintaining identity and tradition. It is not only about “what”, but also about “how”—how to prepare and process the foraged food.

These issues are also very important in tourism. Bessière [1] argues that modern city dwellers seek to go back to nature through their search for so-called “traditional”, local food:

“by eating a so-called natural or traditional product, the eater seems to incorporate, in addition to nutritional and psychosensorial characteristics of the food, certain symbolic characteristics: one appropriates and embodies the nature, culture and identity of an area. It also represents integration into a social world as opposed to the universe of industrialized food. Eating farm-fresh products, for example, may represent for the urban tourist not only a biological quality, but also a short-lived appropriation of a rural identity. He symbolically integrates a forgotten culture” (p. 25).

Sims [17] also notes that tourists who choose to consume local products may not just be enjoying the physical taste of the food. They may also want to engage more with the people and places around them, because “local products have a story—and a meaning—behind them that can be related to place and culture” (p. 333). It is, therefore, clear that tourists who consume local products gain benefits both from provisioning and CES.

The strong relationship between food and heritage is illustrated particularly clearly in the French concept of *terroir*, and in the Japanese concepts of *satoyama* and *satoumi*. *Terroir* is understood as a homogeneous agricultural area, where a combination of natural resources and farming practices (*savoir-faire*) form a unique quality of place and products (especially foods) [41]. The term captures the importance of tradition, local heritage and specific environmental conditions, which all result in a particular food product. Some scholars use the term “biocultural diversity” to address similar issues [42,43]. In Japan, relationships between nature and culture, embedded in the landscape, are expressed in the terms *satoyama* and *satoumi*. Both reflect a unique socioecological production landscape, a mosaic of terrestrial (*satoyama*), or coastal and marine (*satoumi*) ecosystems, along with their human settlements [44].

Tourism is one of the most popular ways to preserve (or even re-develop) the local, traditional culinary heritage. Telfer and Wall [5] suggest that there is great potential for tourism and agriculture to work together in a symbiotic relationship: tourism promotion can focus on agricultural products, which may stimulate export demand, while agricultural promotion may focus on the regional landscape and lead to a growth in tourism. Restaurants can be a platform to promote traditional cuisine. As Kowalczyk and Kubal-

Czerwińska [45] note, although restaurant owners and chefs continue to be fascinated by fusion and molecular cuisine, in parallel, there is a return to traditional recipes that use local and regional products. Bessi re [1] supports this view, drawing upon the example of France, where leading chefs have returned to regional cooking. According to Fust -Forn  [15], the successful promotion of locally-grown food in restaurants requires close relationships with growers, pickers and artisan producers, not to mention understanding their products and stories. He adds,

“the richness and diversity of local landscapes comprise the basis on which the entire gastronomy of a destination is built. And especially the restaurants it has to offer. As a consequence, visitors and tourists would like to find menus with plenty of local products and dishes that have the power to showcase the sense of place, or the terroir” (p. 5).

Finally, Smith and Hall [46] note that branding menus in terms of local food content can play a significant role in restaurant marketing and may lead to the ongoing purchase of regional foodstuffs by consumers. Moreover, the use of local foods can increase the perceived authenticity of the restaurant experience, along with the wider experience of the destination.

3. The Study Area

3.1. The Environmental Context: Wild Food

The research was carried out in the largest lake land region in Poland, the Great Masurian Lakes, in the summer of 2020. Ten municipalities (2811 km²) were included, including seven small and medium-sized towns. The region’s postglacial landscape is diverse. To the north, undulating moraines are covered by a mosaic of fields, forests and meadows. The fluvioglacial plain in the south is covered by a coniferous forest known as the Piska Woodland. In general, forests constitute 35% of the area. The region is characterized by multiple large, interconnected lakes, including the largest lake in Poland,  niardwy (113.8 km²). Water bodies comprise 25.1% of the study area. These environmental conditions, in which forests and lakes are the main elements of the countryside, constitute the Masurian *terroir*. Products which are being foraged include fish, game, wild fruit, and mushrooms. The most popular fish are pikeperch (*sander lucioperca*), perch (*perca fluviatilis*) and vendace (*coregonus albula*) and game include deer, roe deer, boar and hare. Wild fruit include blueberries, wild strawberries and cranberries, while mushrooms include *boletus edulis*, *xerocomellus chrysenteron*, and chanterelle (*cantharellus cibarius*). Around 38% of the area is dedicated to agriculture, made up of 23% farmland, 8% meadows, and 7% orchards. The main crops are cereal and potatoes [47]. Although the region is commonly perceived as a highly natural, pristine environment, it is a constructed, touristic wilderness. In particular, the lakes are a well-known nature-based destination mainly for domestic tourism, in which swimming, picnicking, walking, sailing and fishing are very popular activities [48].

3.2. The Historical and Social Context: Heritage

For centuries, the area was part of Prussia—a historical European region located on the south-east coast of the Baltic sea. As in many other border regions, people were particularly locally embedded, and were much more attached to the place than a state or country. This situation lasted until the 1940s. Between the First and Second World Wars, the region was part of Germany, then, after the Second World War, it became Polish as a result of the Potsdam Conference. Mass migration followed, both to and from the region. Most of the German population left, while Poles arrived. The latter came from regions that were Polish before the Second World War (e.g., today’s Western Ukraine, Belorussia and Lithuania), as well as from other regions of the country (mainly Central Poland). This turbulent history interrupted the existing food heritage and resulted in the development of a mix of cultures and traditions, including culinary traditions. Defining what constitutes local heritage cuisine, is, therefore, extremely difficult. Should traditional local or regional cuisine refer to the food that was consumed before World War Two by the then-native population, or should it refer to what people eat nowadays? Or maybe it should include

the food of the immigrant population, which has now been present in the region for over 70 years?

The official European Union (EU) list of traditional and regional agricultural products and foodstuffs was established in 1996, and the Polish contribution was coordinated by the Ministry of Agriculture and Rural Development. However, the list does not give a clear answer to any of these questions. Although it includes 10 prepared meals that reflect the food heritage of the *warmińsko-mazurskie* region (hereafter: *official heritage dishes*; see Table 1), the latter is much bigger than the study area. While far from perfect, there is no other, official source of information on regional or local food heritage.

Table 1. Menus ($n = 72$) included in the analysis showing categories, sub-categories and examples of dishes.

Food Category	Sub-Category: Dishes or Food Included in Dishes	Examples
Wild food	Freshwater fish ² , including: Fish “from the Masurian lakes”	Perch Masurian perch
	Game	Wild boar goulash
	Wild mushrooms, including: Chanterelle (<i>kurki</i>)	Pikeperch in chanterelle sauce
	Other wild mushrooms	Seasonal mushroom soup
	Forest fruit	
Official heritage dishes ¹	Masurian-style carrots (<i>Marchew po mazursku</i>)	
	Crunchy potato pancakes with cottage cheese (<i>Plńce z pomoćką</i>)	
	Goose paste (<i>Smarowidło z gęsi</i>)	
	East-Prussian-style potato soup (<i>Kartoflanka po wschodnioprusku</i>)	
	Potato croquettes stuffed with meat and eggs (<i>Farszynki</i>)	
	Königsberg-style meatballs (<i>Klopsy królewieckie</i>)	
	Fried dumplings stuffed with buckwheat (<i>Dzyndzałki z hreczką i skrzeczkami</i>)	
	Stuffed snails (<i>Ślimaki nadziewane</i>)	
	Gentry-style turkey wings (<i>Skrzydła indycze po pańsku</i>)	
Branded as “Masurian”	Sausage in beer (<i>Kielbasa w piwie</i>)	
		Masurian style pizza, salad with Masurian goat cheese

¹ dishes included in the EU list of certified regional dishes [49]. ² this fish is found in Masuria, but the origin was not given on the menu.

4. Materials and Methods

The exploration of the links between local resources and local food was based on a content analysis of restaurant menus. The study was divided into the following steps: selecting establishments, collecting menus from them and analysing these menus.

The selected restaurants all made reference to local food. Given the complicated history of the area, no requirements were imposed regarding the region’s food legacy. Instead, inclusion criteria were restaurants where the names of their dishes, or their communication channels (webpage, Facebook, the name of the place) referred to one of three words: “local”, “regional”, or “Masurian”. Desk research conducted in July 2020 was supplemented by field studies in August and September 2020. This identified 78 restaurants that fulfilled the selection criteria (Figure 3). Six of them were later excluded due to a lack of data. A dataset of 72 restaurants’ menus was, therefore, created and used as a basis for further analysis. As there was no inventory of all of the region’s restaurants, it is impossible to state exactly what percentage of all of the eating establishments in the study area they constituted. Statistical data show, however, that in mid-2020 there were as many as 341 establishments operating in the gastronomy sector. This would suggest that outlets serving regional or local cuisine constitute ca 23% of all restaurants.

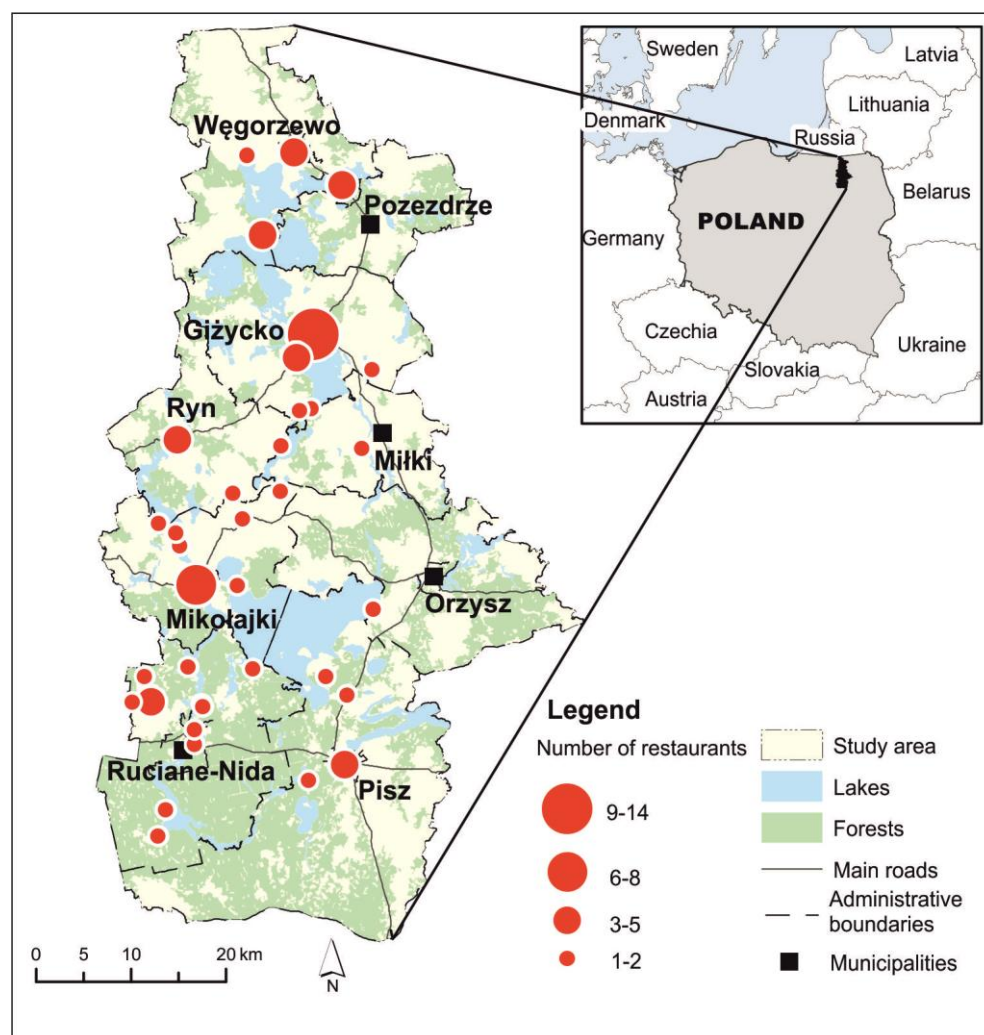


Figure 3. Distribution of restaurants in the study area ($n = 72$).

Menus were collected using a variety of methods. Some were downloaded from websites or Facebook profiles. In other cases, we requested a copy of the menu to be sent by email. Finally, the remainder were visited during field trips, and photographs of their menus were taken on site. The following content analysis of the menus identified all of the food dishes (beverages were excluded) related to one of three groups: wild food; official heritage dishes (included in the EU list of traditional and regional dishes); or dishes branded as Masurian (see Table 1 for details).

Some restaurants (especially those that were more committed to serving and promoting regional cuisine) included further details in the emails they sent. These comments were very helpful in interpreting the results of the content analysis and in understanding the gastronomy sector's approach. They were supported by the opinions and experiences presented by Mierzwa and Gworek [50], who are both local activists and food promoters, as well as three informal interviews conducted with restaurant owners in order to better interpret the results. The latter were asked about the "localness" of the wild food on offer. All three restaurants are well-known in the region and are very popular among tourists.

5. Results

The analysis examined the distribution of references to regional, local or Masurian cuisine on the 72 menus (Table 2). Restaurants were distributed across the whole study area, with the biggest concentrations in towns or near the lakes, i.e., places with the highest tourist flows (Figure 3). In 49 cases, the name referred to a place (the region, a lake, a

village, etc.), underlining its embeddedness in the region. Ten were part of the international Regional Culinary Heritage Europe network [51].

Table 2. Results of the menu analysis ($n = 72$).

Food Category	Sub-Category: Dishes or Food Included in Dishes	Number of Restaurants Offering the Dish	In %
Wild food	Freshwater fish, including:	72	100
	Fish “from the Masurian lakes”	43	59.7
	Game	12	16.7
	Wild mushrooms, including:	43	59.7
	Chanterelle (<i>kurki</i>)	20	27.8
	Other wild mushrooms	34	47.2
	Forest fruit	30	41.7
Official heritage dishes	Masurian-style carrots (<i>Marchew po mazursku</i>)	0	0
	Crunchy potato pancakes with cottage cheese (<i>Plińce z pomoćką</i>)	9	12.5
	Goose paste (<i>Smarowidło z gęsi</i>)	0	0
	East-Prussian-style potato soup (<i>Kartoflanka po wschodnioprusku</i>)	0	0
	Potato croquettes stuffed with meat and eggs (<i>Farszynki</i>)	2	2.8
	Königsberg-style meatballs (<i>Klopsy królewskie</i>)	1	1.4
	Fried dumplings stuffed with buckwheat (<i>Dzyndzałki z hreczką i skrzeczkami</i>)	8	11.1
	Stuffed snails (<i>Ślimaki nadziewane</i>)	0	0
	Gentry-style turkey wings (<i>Skrzydła indycze po pańsku</i>)	0	0
	Sausage in beer (<i>Kiełbasa w piwie</i>)	0	0
	Branded as “Masurian”	32	44.4

5.1. Fish

Among all of the dishes and products analysed in this paper, freshwater fish was the most popular product. It was offered in every single restaurant—sometimes as one dish among many, sometimes as the basis for the menu. Over half of the restaurants stated that it came from a Masurian (or local) lake (Table 2). Although including such information may just be a marketing ploy to underline the outlet’s attachment to the region, it may also be important for consumers who want to consume local food, but who do not know which fish species are local. On the other hand, there may be a deeper reason why this local geographical descriptor features on menus, which refers to culinary systems. As Mierzwa and Gworek [50] note, “for years now most of [the fish] served in [Masurian] restaurants, even in those located on the lake shore, are imported”. This observation was confirmed by two of the three interviewees. One admitted that all of his fish were imported, frozen, from Spain, Kazakhstan and Canada. The second stated that most of the fish served at her restaurant were from a local fish farm, while pikeperch fillet were imported from abroad. According to one respondent, who confirmed the observations reported in Mierzwa and Gworek [50], this is due to the limited availability of fish in the Great Masurian Lakes. An owner of a bar that served mainly fish admitted that “you have to get up early in the morning, queue up [in a fish farm], and then you can get fish (. . .) There isn’t much, but there is some. You can get it if you want to”.

One respondent gave two reasons for this situation: “a robbery economy” and poor management of the lakes, and a growing population of cormorants (a protected species in Poland). These arguments echo Mierzwa and Gworek [50], who state that poor management of the lakes was the result of the mis-managed privatisation of state-owned fish farms beginning in 1989. The authors add three other reasons for the fish crisis: water pollution; a recent, national hydrological drought; and a change in consumer trends. The latter argument is manifested in the fact that people are eating more and more fillets and refusing to eat fish with bones. Mierzwa and Gworek [50] (p. 156) cite the owner of a bar

located between two lakes, “[people] from cities don’t like our fish, because they have to work too hard when it’s on the plate”, (boneless) fillets tend to be imported. One of the respondents confirmed, “if you want to eat local fish, order a whole fish, never a fillet”. However, the same person admitted that people prefer—and order—fillets. In such a situation, restaurants are encouraged to source fish that is easy to buy, and consume, rather than fresh, local supplies. This situation is in line with Weatherell et al. [52], who suggest that price and convenience are among the most important issues when choosing food. Moreover, frozen fish can be served at any time, as supply is not dependent on availability in the local market.

On the other hand, there are some more positive examples of genuine local gastronomy. Around 10% of restaurants stated that their menu was not fixed, as it depended on the availability of fresh fish. This very sustainable solution was, however, not common in the study area. Other restaurants provided in-depth information about the origins of their food. For example, they pointed out that their cheese came from a particular farm, in a particular place, or that their charcuterie was “homemade”. Other examples included menus that provided information about the local food on offer, for instance: “We only use fresh, unprocessed food. We only serve fish from our neighbourhood, often caught from the lake to order”, or from a restaurant website: “We don’t have time for people who don’t have time. That’s our motto, and, at the same time, the quintessence of good gastronomy. (. . .) Our cuisine is based on local and ecological products, food is from our own farm and farming friends in the neighbourhood. We only serve what we (. . .) like eating”.

5.2. Other Wild Food

Mushrooms were the second-most-popular group of wild food. They were served in more than half of the sampled restaurants, with chanterelle being the most widespread (Table 2). The region’s forests mean that the area is popular with foragers. Official statistics indicate that out of all 16 Polish regions, *warmińsko-mazurskie* is the fourth-most-popular for buying mushrooms from foragers [53]. The interviews with restaurant owners revealed that mushrooms are supplied by locals. They mainly serve as a base for sauces to accompany meat (sometimes fish, or crunchy potato pancakes), or as an ingredient in soup.

Thirty restaurants offered dishes that contained wild fruit. Cranberries, in particular, are used in sauces, and blueberries are used as a filling for dumplings. Local cranberries can be frozen and used throughout the year, while blueberries are mainly available during the summer season (but are sometimes frozen and defrosted). Finally, game was on the menu in every sixth restaurant, which made it the rarest wild food on offer. This is unsurprising: hunting game is regulated by law, and its price makes it an exclusive product [54].

5.3. Regional Food

Ten official heritage dishes are listed by the EU. Of these, three are based on potatoes, two on poultry, two on pork, one on flour, and one on garden vegetables (carrots). The tenth, added in January 2020, is stuffed snails. Potato and flour dishes are typical of the agriculture of the region. Almost none of these 10 dishes featured on the sampled menus. Six were completely absent, one was offered by one restaurant, and another was available at two eateries. Even the two most popular local dishes were only available at eight or nine restaurants (Table 2). This finding illustrates the problem with the area’s food heritage. None of the listed dishes are based on the mushrooms, game, fish or wild fruit that are foraged in the Masurian *terroir*. Nor are they based on the food heritage brought by post-war migrants. Putting historically traditional dishes back on the menu can be difficult, even in times when there is a widespread fashion for regional food.

Finally, the study found that 32 restaurants used the word “Masurian” to refer to other (unlisted) dishes. In eight cases, these dishes included fish (e.g., Masurian pizza, which listed freshwater fish as an ingredient) and five included mushrooms. In 10 other restaurants, however, the word “Masurian” referred to pork dishes, with no particular Masurian ingredient (e.g., “Masurian pork knuckle grilled in beer”). This could have

reflected one of two scenarios. First, “Masurian” was used to emphasize the local origin of meat or, second, it was used as a marketing tool to differentiate a dish from other, similar, offerings. The latter argument could be applied to many other dishes, such as “cold Masurian beet soup with yogurt”, which finds its origin in Lithuania, but is a popular soup in many parts of Poland, or “Masurian crunchy potato pancakes with creamy mushrooms”.

These examples show that many restaurateurs have noticed the demand for local and regional cuisine, and have tried to meet it in their menus. Very few, however, refer to the area’s culinary, cultural heritage. Items on the EU list of traditional and regional agricultural products and foodstuffs are difficult to find. This is unsurprising, as this poor, border region has never had a sophisticated or refined food heritage. A bar owner, who was asked whether she served regional food, replied: “I’m not 80 years old, I can’t remember what the regional cuisine is. (. . .) If we assume that fish is regional food, then yes, I’m serving regional food (. . .) but you’re the expert; it’s up to you to say whether this is regional food or not!”.

6. Discussion

The Great Masurian Lakes, a popular nature-based tourism destination in Poland, is a border region that, like many others, has had a turbulent history. The new frontiers that were established after the Second World War, followed by mass migration from and to the region, did not support the development of a traditional local cuisine. Nevertheless, increased interest in local food, observed globally, is articulated in the region’s gastronomy. We identified 78 restaurants that referred to local food in their publicity materials, which is a lot, even if, in reality, they are just selling themselves as local [13].

Telfer and Hashimoto [55] examined food tourism in the Niagara region of the United States. They concluded that many countries in the Old World (e.g., France, Italy) have a long-established reputation of national cuisines; New World nations “also see the potential of culinary tourism products and are trying to establish their countries as culinary destinations by inventing New World national cuisines” (p. 177). Similar attempts to establish a regional culinary heritage can be observed in Masuria. Regional tourism is growing (during the 2020 pandemic it was one of the most-visited regions in summer), and its reputation as a place to enjoy magnificent scenery and unspoilt nature is a significant opportunity for the gastronomy of the area.

Wild food is frequently found on the menus of restaurants in the region. The most popular option was freshwater fish, which was served in every eatery in the sample. This was followed by (respectively): mushrooms, forest fruit and game (the latter being offered in every sixth restaurant). Drawing on the work of Schulp et al. [14], which understands wild food as an “iconic ecosystem service”, these results are a direct reference to nature, and illustrate the meaning of provisioning ES (see Figure 4). However, as Fish et al. [26] point out, environmental spaces enable, and are shaped by, cultural practices. In many cases, restaurants go beyond simply offering wild food on a plate. Local products have a story [17] and these stories are narrated in restaurant menus. Using words such as “homemade”, “fresh”, “ecological”, “farm-friendly”, etc. (see Section 5.1), restaurants sell the story of local food [13]. Branding fish with a geographical descriptor (“fish from the Masurian lakes”; “Masurian pikeperch in chanterelle sauce”), seen in 43 of the 72 restaurants, is a very important part of this story. It provides tourists with benefits understood as a feeling of regional identity and a connection with nature; as Bessière [1] puts it: “[through local food] one appropriates and embodies the nature, culture and identity of an area”. These meanings, labels and stories are what make wild food a CES (Figure 1). In this case, provisioning services are conduits for CES [26]. Hall [9] (p. 284) notes that it is important to better-understand food and cooking practices “so that they are viewed not only in terms of nourishment but also as social constructions and products”. Moreover, as the ES cascade (Figure 1) shows, it is important to understand them as a continuity between the natural environment and humans, as otherwise it becomes difficult to discuss food in the region in sustainability terms. One such example is fish: the findings show that

there are some restaurants, located near the lakes, which do not offer fish from the local ecosystem, but serve imported fish. Although the research does not allow us to draw any conclusions about the scale of the problem, this striking finding is supported by an in-depth report on the situation in the Masurian Lakes regarding catching, managing, selling and cooking fish [50]. Moreover, the analysis highlighted that, in addition to freshwater fish, numerous restaurants offered saltwater fish and shellfish (mainly shrimp). This shows that fish, which is so popular in the region's restaurants, also has an important cultural value. Tourists who come to the Great Masurian Lakes want to eat fish because, for them, the lakeside location is associated with its consumption. However, this CES (here, a feeling of symbolic engagement with place) may be provided by food that is not, in fact, local. As noted above, the owner of a bar located between two lakes offers tourists seawater fish (cod, in this particular case), because—according to her—tourists prefer food that is easy to eat [50]. This notable example shows that demand for so-called “local food” does not necessarily correspond to supply (see Figure 1). Paradoxically, this is not necessarily a problem for tourists. As Sims [17] illustrates, using the example of the Lake District in the United Kingdom, tourists focus less on the origins of products, preferring, instead, to concentrate on their symbolic attributes. This poses, however, an important challenge for the sustainability of food (and) tourism in this area.

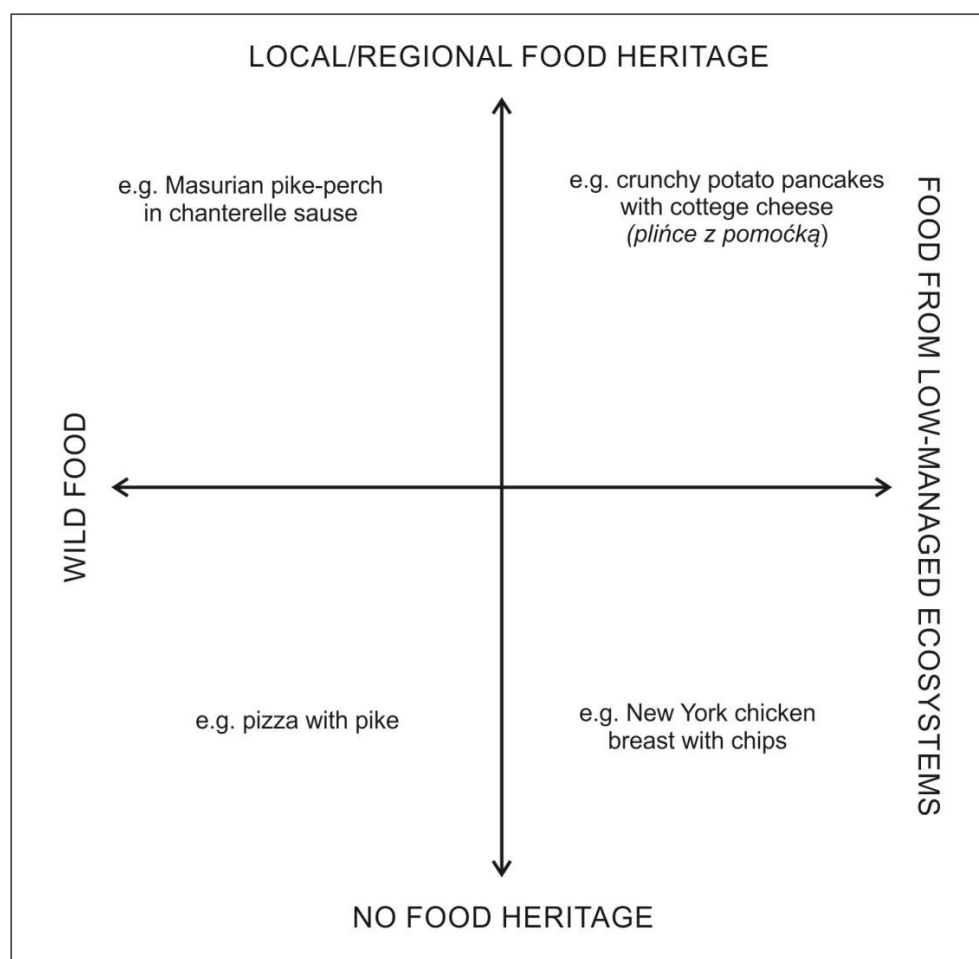


Figure 4. Examples of dishes served by Masurian restaurants situated in terms of the relationship between the type of ecosystem and food heritage.

Traditional local food is often a result of the natural environment. Timothy [56] states, “while the tenets of pure environmental determinism have long been debated in the geographical sciences, it is obvious that the environment did govern what native peoples

could consume". Over the centuries, with the development of agriculture, farmers have learned which products grow best in their environment [56]. These processes have made a significant contribution to the rise of local food heritage. In some cases, and in some cultures, the set of local characteristics, together with specific farming practices, has led to the development of a specific *terroir*. In the case of the Great Masurian Lakes, the food heritage is fuzzy, as the notion of heritage itself is problematic. In the current climate, where global interest in food (and) tourism is increasing, various attempts are being made to redevelop it. Top-down initiatives, such as the EU's list of traditional regional dishes, have proved to be unsuccessful. The analysis showed that very few restaurants offered official heritage dishes. This may be the result of an inaccurate list, which, in turn, would suggest a lack of social capital and weak institutions in the region's food sector. It may also, however, be a result of the region's difficult past and dissonant heritage [57]. Königsberg-style meatballs, which only appear on one menu, are a reminder of the Prussian history of Masuria (Königsberg is now known as Kaliningrad). On the other hand, crunchy potato pancakes with cottage cheese is a very simple dish. It is a popular food that uses locally-grown potatoes; historically, it was prepared and consumed by the peasant farmers who used to live in this area (Figure 4). These examples illustrate two strands of historical heritage linked to the same area.

The third kind of heritage is slowly being reconfigured from the bottom up, based on the surrounding natural environment. It can happen intuitively: salads, pizzas or dumplings are branded as "Masurian" because they contain fish. If pancakes are described as "Masurian", they contain mushrooms. Of course, the label can be overused by restaurateurs (e.g., cold Masurian beet soup with yogurt), reflecting hot trends [13] rather than a genuine local dish that uses regional products and a traditional recipe. Consumers' tastes and expectations are an important part of this equation, and may be one of the reasons why the "local" label is not always accurate.

Apart from the (quasi) local food on offer, the 72 Masurian restaurants in the sample propose a variety of other dishes. In most cases, local dishes were a small part of a much broader menu. Moreover, we only sampled restaurants that publicised the sale of local food, and not every eatery. Other restaurants sold "New York chicken breast with chips", "Caribbean salad", or "Israeli couscous with pomegranate". Even restaurants that offered official heritage dishes (*dzyndzałki z hreczką i skrzeczkami*, *plńce z pomoćką*) also sold falafels and hummus. In some cases, their publicity was totally misleading. One of the most striking examples was a restaurant whose name made direct reference to Masurian cuisine. This outlet served fish soup made from pikeperch, shrimp and squid, or pikeperch fillet in shrimp sauce. Although shrimp and squid are an important local food in many seaside regions worldwide, they are not found off the coast of Poland, not to mention Masuria's freshwater lakes. This may be the result of a strategy that seeks to provide something for everyone, with fans of local cuisine being only one of many types of consumer. Further research is, however, needed to explore the issue of marketing strategies.

The most important limitation of this study is a lack of knowledge of the origins of food served in the sampled restaurants. For each potato pancake, we do not know whether the potatoes were grown in the region, or were bought in a supermarket selling potatoes from other places within and outside Poland. The case of fish is the most obvious illustration that local food does not necessarily have to be locally supplied. As outlined in the Introduction, and shown in the ES cascade (Figure 1), the consumption of local food consists in producing in, and buying from, local systems. Overcoming this limitation would, however, need another approach and another set of methods, and would have to be based on the assumption that every restaurateur would be honest about the food system he or she uses. We made an initial attempt to apply this approach by conducting interviews and studying information about food origins where available, but this aspect will certainly have to be examined in the future. Notwithstanding this limitation, the findings show the scale of the provision of local (especially wild) food by restaurants, which was the key issue studied.

7. Conclusions

The purpose of this study was to examine relationships between the natural environment and what the tourist finds on their plate; in other words, links between local resources and restaurant food. The subject is especially relevant as, worldwide, interest in local food is growing. Moreover, there are many potential benefits and implications for sustainability. Using the ES concept helps us to understand the problem from a wider perspective, extending to nature's services delivered to humans, and the range of benefits. As Potschin and Haines-Young note [30] (p. 577), "whether we choose to think of the ecosystem services concept as a new paradigm or not, the novel aspect of the idea is that it encourages people to re-examine the links between ecosystems and human well-being in a pragmatic way". The findings of this study highlight an apparent trend that seeks to link the supply side of the ecosystem, with human demand, via the tourist's plate (shown in grey in the ES cascade, Figure 1). Serving local food ensures that both provisioning and cultural ES are delivered to tourists, and this is clearly seen in the strategies of some restaurants. Nevertheless, as suggested by Mierzwa and Gworek [50], and confirmed by the interviews, some restaurants that claim to serve "local" food do not serve food derived from the local ecosystem. They seek to respond to tourist demand for ES, but do not deliver (the notable example being imported pikeperch). To some extent, tourists are being deceived but, at the same time, they are deceiving themselves. There may be several reasons for this situation, ranging from demand (illustrated by the inclusion of shrimp on many menus), to a failure to identify (or the depletion of) local ecosystem resources, which constitute the supply side of the ES cascade. Further research should explore these reasons in more depth, and investigate sustainable options regarding the relation between food and tourists. It is hoped that this paper will guide not only future research on the relationships between food, tourism and ES, but will also contribute to better planning and management of ecosystem resources, and the potential development of sustainable food production and consumption in nature-based tourism destinations.

Finally, the area's dissonant heritage adds another dimension to the relationship between food, as a provisioning ES, and its cultural role. A difficult history, interrupted by mass migration from and to the region, is reflected in today's gastronomy. Food representing the area's historical heritage is almost non-existent on menus. It has been replaced by nature, and the region's iconic ES, i.e., wild food.

This paper contributes to the literature in two ways. First, it combines the ES perspective with that of local food and tourism. It shows that the benefits of eating local food go beyond material, tangible ES, and extend to non-material, intangible aspects. The latter include connections to place, a feeling of identity, or buying the "local" story. It could be said that provisioning and cultural ES meet on the tourist's plate. Second, this study shows that, in this case, the relationship between humans and their environment is strongly influenced by the area's turbulent history and dissonant heritage—which is also translated onto the tourist's plate.

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