Empirical Research Article

The Influence of Agritourism Experiences on Consumer Behavior toward Local Food

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Abstract

Agritourism—visiting a working farm for education or recreation—may serve as a tool to increase local food consumption as it often includes opportunities to purchase local food on-site. Yet, the influence of agritourism on consumers' local food purchasing behavior remains underexplored. Thus, this study measures the impact of agritourism experiences on consumers' intentions to purchase local food. To do so, visitors were surveyed at six agritourism farms with similar agritourism activities (e.g., U-pick, educational displays, and on-site market) located across North Carolina (USA) before (pre) and after (post) their visits ($n = 328$). Data, collected during the 2018–2019 peak agritourism season, were analyzed using repeated measures multivariate analysis of variance. Findings indicate that agritourism experiences effectively increase consumers' intentions to purchase local food. These findings advance the scholarship of agritourism. They also provide useful information to design effective marketing campaigns to promote the purchase and consumption of local food and strengthen local agricultural systems.

Keywords

attitude, farm visit, intention, local food systems, theory of planned behavior

Introduction

Increased globalization promotes agricultural intensification, which brings degradation of terrestrial and water ecosystems (Tilman et al. 2002) and creates power and wealth concentration at the expense of rural communities (Lyson and Welsh 2005). Agricultural intensification has also produced a severe disconnect between producers and consumers, instigating a concern for fundamental changes in the global food system (Kloppenburg, Hendrickson, and Stevenson 1996). Even though globalization is inevitable, the structure of food distribution and power relationships at the local level is a dynamic system that opens the door for alternative food systems (Hendrickson and Heffernan 2002). Thus, several authors have called for a re-localization of food systems to empower consumers and producers in their decision making, promoting on-farm diversification, and supporting agroecological practices (Kloppenburg, Hendrickson, and Stevenson 1996; Rotz and Fraser 2015).

Acknowledging the potential benefits of local food systems (LFS), the promotion of local food has been at the center of federal, state, and local government policy in recent years (Martinez 2016). Concerns relating to the environment, support for local farmers, and rural economies are among the most common reasons identified (Onozaka, Nurse, and McFadden 2010). Consumers increasingly want to take an active role in the economic system and base their behavior on ethical values (Vermeir and Verbeke 2006). Despite interest from consumers, producers, and policy makers in furthering the benefits of local food, conventional agricultural production and marketing systems continue to hold an advantage regarding economies of scale, agglomeration of profits, and bargaining power over LFS (Rotz and Fraser 2015). Accordingly, more research is needed to uncover how LFS-promoting policies can successfully improve the resilience of the food systems and re-engage consumers with the source of their food (Pearson et al. 2011).

Consumers' engagement in local food consumption has been primarily investigated in the context of urban gardens (Sadler, Arku, and Gilliland 2015), membership in community-supported agriculture (Pole and Gray 2013), and farmers' markets (Feagan and Morris 2009; Gumirakiza, Curtis, and

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Bosworth 2014). To our knowledge, local food consumption has not been explored in the context of agritourism, despite its potential. Agritourism has been identified as an important source of income for farmers as well as a suitable market outlet for local food and potential avenue to connect consumers with their local farmers and food sources (Govindasamy and Kelley 2014; Shi and Hodges 2016; Tew and Barbieri 2012). Likewise, the tourism literature supports the potentially transformative power of tourism experiences and has identified a need to empirically measure how tourism experiences shape consumer behavior (Mair and Sumner 2017).

Consumers' preferences and willingness to purchase local food will shape much of the future of LFS and its potential benefits (Boys and Hughes 2013; Selfa and Qazi 2005). Nonetheless, policies and programs advocating for sustainable food systems usually focus on supporting the supply—farmers (Martinez 2016), excluding consumers' involvement from the equation. Such exclusion is problematic because as Francis et al. (2003, p. 113) explains, "Only in closing such a loop by including the consumer will the agroecological cycle be completed." Food vendors concerned with product differentiation of local food need to understand consumer behavior, their motivations, attitudes, and beliefs to expand the local foods market. This would allow improved marketing to those already committed to LFS as well as connecting with new consumers who are not already committed to supporting local farmers through their purchasing. As aforementioned, agritourism has the potential to connect visitors with LFS and subsequently encourage local food consumption. Accordingly, this study was designed to investigate whether agritourism provides a space for (re)connecting local food producers and consumers by measuring whether an agritourism experience influences consumer's intention to purchase or support local food in North Carolina (USA).

Literature Review

The sustainability of food systems depends on empowered and educated consumers who manifest their preferences through consumption patterns and voting power (Roberts, Harder, and Brashears 2016; Sage 2014). As agritourism can provide a space for consumers to reconnect and reflect on the food system, this work focuses on the influence of on-farm visits on consumer behavior toward local food. This is particularly valuable as the impact of farm recreational visits on consumers' attitudes, knowledge, and behavior is unexplored. The following literature review outlines the connections between agritourism and consumer behavior.

Localization of Food Systems: A Sustainability Approach

Although the need to localize food systems has been called for, defining LFS and local food has proved to be challenging (Carroll and Fahy 2015). Eriksen (2013) identified proximity as a key term to define local food in three domains: (1) geographical proximity, defined as the area, community, or geographical boundary within which food is produced, retailed, and/or consumed; (2) the relational proximity between local actors reconnected through alternative production and distribution practices, such as farmers markets and farm shops; and (3) values of proximity in terms of authenticity, freshness, and/or quality that actors may attribute to local food. Settling this ontologic debate is not the purpose of this work. Instead, this study undertakes a sustainability approach, which reconciles different meanings to define food systems. According to Feenstra (2002, p. 100), a sustainable food system is "a collaborative effort to build more locally based, self-reliant food economies—one in which food production, processing, distribution, and consumption is integrated to enhance the economic, environmental, and social health of a particular place." This definition is suitable for this study as it is place-sensitive, value-oriented (collaborative), and participatory in nature (DeLind 2011). It also places importance on consumers, when their role in the sustainability of food systems is often neglected (Francis et al. 2003).

Promoting LFS aims to create more direct links between producers and consumers, aiding sustainability through shorter distances, fewer intermediaries, and less industrial processing (Allen 2010; Boys and Hughes 2013; Pole and Gray 2013). Blay-Palmer, Sonnino, and Custot (2016) discussed the consequences of a fragmented food system in which communities do not act in their best interests. They describe how consumer behaviors are mediated by financial circumstances, corporate consolidation, or aggressive marketing that shapes consumers' tastes and needs. Randelli and Rocchi (2017) advocated for alternative food exchanges in which consumers shape their desired model of consumption collaborating with producers who at the same time shape their desired model of business. As this model hinges on consumers who are invested in the process, research on behavioral change processes related to local food consumption is crucial for the advancement of sustainable market solutions (Blay-Palmer, Sonnino, and Custot 2016).

Several researchers have offered strategies for promoting engagement with LFS among consumers and subsequent support for LFS through consumer behavior. Bos and Owen (2016) argued that consumers who are more closely engaged with contemporary debates about sustainable and inclusive agri-food systems, including those that are citizen-led, will foster more local food consumption behaviors. Likewise, Selfa and Qazi (2005) called for research to effectively promote dialogues and spaces that change people's behavior to support a more local, sustainable food system. Hence, creating a space for reflection, communication, and experimentation with alternative social structures to create conscious consumers is central to strengthening LFS (Allen 2010; W. Chen and Scott 2014; Feldmann and Hamm 2015; McGuirt et al. 2014). Accordingly, this study puts forward agritourism as a potential means to help to fill that role.

Agritourism as a Space for Reconnection with Local Food

Agritourism is commonly defined as recreational or educational activities carried out on a working farm or other agricultural settings (Gil Arroyo, Barbieri, and Rozier Rich 2013). The many definitions of agritourism commonly refer to leisure or educational services that take place in a farm (McGehee, Kim, and Jennings 2007; Phillip, Hunter, and Blackstock 2010; Tew and Barbieri 2012). However, the early agritourism literature presented ontological inconsistencies that were hindering scholarly refinement and policy and managerial guidelines. Gil Arroyo, Barbieri, and Rozier Rich (2013) resolved many of those inconsistencies by bringing together the viewpoints of key agritourism stakeholders (farmers, potential and current visitors, and extension faculty). The authors concluded that a working agricultural setting, as well as the entertainment and education purpose, were key aspects to define agritourism activities. They also found that none of the stakeholders consider "travel" as a defining characteristic of agritourism, making all farm visitors, regardless of the distance traveled, agritourists. Agritourism contributes to the economic resiliency of LFS by providing a supplementary source of income to farmers (Blay-Palmer, Sonnino, and Custot 2016) and offering farmers a diversification strategy to manage risk in agricultural contexts (Barbieri and Mahoney 2009). For example, prior research demonstrates that agritourism operators benefit from increased direct sales associated with on-farm recreational purchasing (e.g., U-pick) and other farm products (Tew and Barbieri 2012). Agritourism also contributes to environmental and cultural resiliency by fostering wildlife habitat improvement and water conservation, preservation of rural heritage and reconnection with agrarian culture, and increasing employment of family and non-family (Barbieri 2013).

Although understudied, scholars suggest that agritourism may also serve as a way to engage consumers in ways that further contribute to sustainable LFS. Several studies have consistently shown that agritourism operators are strongly motivated to educate visitors about agricultural systems (McGehee, Kim, and Jennings 2007; Ohe 2017, 2018; Tew and Barbieri 2012). Some consumer studies, although to a lesser extent, indicated that visitors are motivated to engage in agritourism to learn about agriculture and local foods (Xu et al. 2014). Thus, it is reasonable to assume that farm visits may also increase consumers' awareness and willingness to purchase local agricultural products. However, this potential educational benefit of agritourism remains unexplored (Barbieri, Stevenson, and Knollenberg 2019). This knowledge gap is also consistently reported in the tourism literature. Mair and Sumner (2017) discussed how little research has been conducted to assess the pedagogical potential of tourism as a transformative process of reflection to develop a critical consciousness toward food. In summary, the potential to influence consumers' perceptions of local foods needs to be explored broadly in tourism, and more specifically in relation to agritourism.

Several attributes of agritourism suggest it may be particularly effective at encouraging local food consumption. At the most basic level, agritourism experiences often involve direct contact with local food (Tew and Barbieri 2012), providing opportunities to purchase on-site. But beyond providing easy opportunities for purchase, agritourism may foster deeper bonds with local foods and influence future food purchase patterns (Kim et al. 2019). First, agritourism experiences provide opportunities to learn more about local food products and seasonality (Tew and Barbieri 2012). This increased knowledge about product attributes may lead to a higher preference for the product that justifies higher prices (Wägeli, Janssen, and Hamm 2016). Increasing product knowledge also contributes to product involvement (i.e., the perceived importance of a product to an individual based on intrinsic needs, values, and interests) given that more knowledgeable consumers process product attributes more thoroughly (Sujan 1985). Fostering product involvement is important because it can increase willingness to pay for local food (Campbell, DiPietro, and Remar 2014) and bonding with local food producers, which can ultimately result in building loyalty to a product or farm (Kline, Barbieri, and LaPan 2016).

Abundant evidence also indicates that consumption of local food is a strong component of touristic experiences. The literature especially stresses the role that food plays in the authenticity of the touristic experience and the importance of iconic food and drinks in creating destination image (Sims 2009). Specifically related to farm visits, Kline, Barbieri, and LaPan (2016) concluded that agritourism has the capacity to create a consumer bond with the food system in the context of niche meat markets. Thus, as food is a significant component of touristic experiences, participating in tourism might increase knowledge and involvement of food products. Yet, scarce knowledge exists on the effect of agritourism on overall consumers' attitudes and behaviors toward local food. For that reason, research is needed to determine whether agritourism can influence consumer behavior toward local foods.

Consumer Behavior in Local Food Systems and Tourism

A robust line in the tourism literature focuses on consumer behavior seeking to understand decision-making processes. Research addresses the role of values, motivations, attitudes, self-concept and personality, expectations, perceptions, demographics, satisfaction, trust, and loyalty in tourists' behavior (Cohen, Prayag, and Moital 2014). An examination of consumer behavior research in both local food and tourism studies denotes common ground in three aspects. First, both bodies of literature support the importance of the social

dimension of consumer behavior, stressing consumers' quest for satisfying psychosocial needs beyond utilitarian ones (Cassia et al. 2012; M. F. Chen and Tung 2014; Choo and Petrick 2014; Feagan 2007). Within this context, benefiting the community is important to both local food consumers and tourists. Consumers' motivations are not necessarily unique in the context of local food, since the concern for price, convenience, and quality is still relevant (Hinrichs 2000), but a social dimension (e.g., concern for supporting LFS) may be important. Constructing a "fuller image" of consumers and their relationship with local food is necessary to contribute to both the tourism and local food consumption bodies of knowledge (Carroll and Fahy 2015, p. 574). Thus, exploring whether agritourism triggers a concern for social dimensions of local food is a valuable opportunity for research.

Second, the important role of past experiences on future behavior is well established in both the local food and tourism consumer behavior literature (Choo and Petrick 2014; Cohen, Prayag, and Moital 2014; Kline, Barbieri, and LaPan 2016; Nuttavuthisit and Thøgersen 2017; Powell, Kellert, and Ham 2009; Rahman et al. 2018). Powell, Kellert, and Ham (2009) concluded that touristic experiences can be geared to educate the public and influence environmental behavioral intentions. Tourists also express a desire to revisit the destination as a result of favorable food experiences (Stone et al. 2017). In the case of agritourism behavior, Choo and Petrick (2014) found that different types of social interaction affect tourists' satisfaction and revisit intention given that visitors develop enduring positive relationships with their hosts. It has also been established that agritourism promotes on-site recreational local food purchasing through U-pick activities (Tew and Barbieri 2012), yet the local food marketing potential of agritourism experiences requires further examination (Kline, Barbieri, and LaPan 2016).

Third, there is growing evidence on the role that local food consumption plays in tourism experiences as a source of authenticity (Sims 2009) which is also a motivation for local food consumers (Hasselbach and Roosen 2015). Local food is seen as a connection with place and territory (Cassia et al. 2012) leading visitors to experience culture through local food (Sengel et al. 2015). As such, most of the constructs in consumer behavior include a component of identification with the local context across several countries and cultures (Cassia et al. 2012; W. Chen and Scott 2014; Feagan and Morris 2009). Therefore, an agritourism experience might influence consumer behavior toward local food by highlighting agritourism's contribution to the community, providing a satisfactory and memorable experience for consumers, and stressing connections of food with culture and territory. Nonetheless, there is scant knowledge about how agritourism experiences can foster a sense of community and how this might translate into local food preferences.

Theoretical Approach and Research Design

Consumer behavioral theory is instrumental to understanding the factors limiting or enhancing consumers' interest in local food (Lombardi et al. 2015). The theory of planned behavior (TPB; Ajzen 1991) has been one of the most influential theories in the field of consumer behavior in the tourism literature. It has been used to investigate a wide array of subjects such as determining consumers' intention to visit green hotels (M. F. Chen and Tung 2014), consumers' intention to choose restaurants offering organic menus (Shin et al. 2018), and to explore psychosocial and demographic variables of intention to purchase sustainably produced food (Robinson and Smith 2002).

TPB builds upon three determinants of consumer's behavioral intention: attitudes, perceived behavioral control, and subjective norms. Attitudes are defined as a summary evaluation of the behavior captured in attribute dimensions as positive or negative (Ajzen 2001). Thus, the characteristic that most commonly describes attitudes is its evaluative nature (Ajzen 2005). In the context of local food consumption, an attitude might be that buying local foods is a good thing to do. Perceived behavioral control refers to the person's beliefs about the ease or difficulty of performing a behavior (Ajzen 1991). For instance, whether people think local foods are easy to find or purchase. The construct subjective norms is a measure of a person's beliefs about whether significant others think he or she should perform the behavior (Conner and Armitage 1998); in other words "perceived social pressure to perform or not perform the behavior" (Ajzen 1991, p. 188). For example, an individual might perceive that friends and family would be happy if they knew he or she purchased local foods. One of the premises of TPB is that when people understand the potential difficulties of engaging in a behavior, they plan their actions accordingly (Ajzen 1991). As such, an individual's positive attitude toward a behavior, beliefs about significant others' perceived importance of the behavior, and high perceived behavioral control will result in stronger reported intention to perform a given behavior (Ajzen 2005). Hence, TPB posits that by accounting for motivational antecedents, behavioral achievement can be predicted, which reflect intentions and other factors under volitional or perceived behavioral control (Ajzen 2005).

Although attitudes, perceived behavioral control, and subjective norms are the primary components of TPB, others have proposed including personal norms in specific contexts. For instance, M. F. Chen and Tung (2014) proposed extending TPB to include personal norms when predicting environmentally friendly intended behavior. Personal norms are defined as self-construed expectations about carrying out an action in particular situations (Schwartz 1977). Onel (2017) verified the usefulness of adding personal norms to determined consumers' pro-environmental purchasing intended behaviors. Norm activation theory poses that behavior can be

modified by influencing people's perception of self-responsibility and activating their personal norms (Schwartz 1977; Stern et al. 1999). Activated personal norms are experienced as feelings of moral obligation, not as intentions, and are a subtype of attitudinal variable, that is, "evaluations of acts in terms of their moral worth to the self (Schwartz 1977, p. 274). Hence, this study will use the TPB, extended with personal norms, as a theoretical framework.

Given that consumers have a central role in strengthening LFS, scholars have called to further the investigation of how to better connect consumers with their LFS and encourage them to support it through their behaviors, particularly as it relates to the purchase and consumption of local food. Although agritourism presents one promising model for creating spaces to motivate consumers to engage with the source of their food, scant information is available to support such an argument. Given that the TPB offers a helpful theoretical approach to guide the inquiry into the aspects that agritourism experiences might influence related to local food consumer behavior, this study was designed to address the aforementioned knowledge gaps.

This article reports on a part of a major study that investigated the effects of agritourism on families' consumer behavior (parents) and agricultural literacy (children). This article specifically focuses on the role that agritourism can play in encouraging adults to purchase local foods, as this potential additional benefit has not been investigated yet. Filling this knowledge gap, especially concerning the impact of agritourism experiences on consumers' intended behavior toward local food, is important to design holistic strategies to support and strengthen LFS. Therefore, the overall aim of this specific study is to measure the influence of agritourism on consumers' intended behavior to purchase local food. Informed by the TPB, this study used a pre and post survey of agritourism participants to measure the change in attitudes, perceived behavioral control, subjective norms, personal norms, and intended consumer behavior related to local food before (pre) and after (post) engaging in agritourism experiences. Accordingly, this study tested the following hypotheses:

Hypothesis 1: An agritourism experience has a positive impact on attitudes related to local food and purchasing local food (*hypothesis 1-A*), subjective norms related to purchasing local food (*hypothesis 1-B*), perceived behavioral control related to purchasing local food (*hypothesis 1-C*), and personal norms related to local food (*hypothesis 1-D*).

Hypothesis 2: An agritourism experience has a positive impact on local food intended purchasing behavior (*hypothesis 2*).

Research Methods

This study examines the impact of agritourism experiences on intentions to buy local food. As agritourism experiences provide opportunities to learn about local food products and seasonality (Tew and Barbieri 2012), promoting loyalty with local specialty products (Kline, Barbieri, and LaPan 2016), and impact future food purchase decisions (Kim et al. 2019), agritourism experiences may also increase intentions to purchase local food. Determining the influence of agritourism experience on local food purchasing intentions may expand the knowledge about the benefits of agritourism and offer potential means to increase local food consumption.

Sampling Procedures: Site Selection and Participants

A characteristic of agritourism is the diversity of offerings used to build uniqueness across farms (Gil Arroyo, Barbieri, and Rozier Rich 2013). Yet, the study purpose required that the farms selected to survey participants shared similarities in terms of offerings. Accordingly, the sample for this study was drawn among farms which had (1) educational activities (e.g., presence of signage or a guided tour); (2) at least one type of hands-on agricultural experience (e.g., U-pick, petting animals); (3) recreational activities for children (e.g., playground, corn maze); and (4) an on-site store (e.g., gift shop, farm market), which was deemed essential for the redemption of the participation incentive. The North Carolina Department of Agriculture and Consumer Services (NCDA&CS) provided a list of all the agritourism farms fulfilling the aforementioned criteria which included 43 farms located across the state.

The research team used the identified farms' website information to achieve a mix of farms located across three regions of North Carolina (NC, USA) that represented agricultural and agritourism diversity. During a preliminary farm visit, the researchers assessed general farm (e.g., acreage) and agriculture (e.g., types of crops grown) information as well as specific agritourism offerings (i.e., recreational and educational activities), capacity (e.g., number of visitors per year, seasonality), and facilities (e.g., parking availability, types of restrooms). During the visit, farmers were asked about their willingness to collaborate in the study. Based on this assessment, six farms were selected as study sites and contacted to coordinate details for data collection. One farm was located in the west, three farms in the piedmont, and two farms in the eastern region of North Carolina. Data were collected during two major agritourism seasons in North Carolina. The first data collection occurred in October 2018 during the u-pick pumpkin season. The second phase took place in April-May 2019 when u-pick strawberries are in high demand. Table 1 summarizes the main characteristics of the study farm sites.

According to this research's overall aim, the sample of this study was composed of families visiting any of the six selected agritourism farms in North Carolina. Families were defined as a visiting party composed of at least one parent accompanied by at least one child between ages nine and thirteen. This age group was selected given the importance of

Table 1. Main Agriculture and Agritourism Attributes of the Study Farm Sites.

	Farm 1	Farm 2	Farm 3	Farm 4	Farm 5	Farm 6
Agricultural production indicators						
Farm size (acres)	70	60	1,700	1,000	300	100
Farmed acreage	38	90	1,700	500	250	28
Crop production	Yes	Yes	Yes	Yes	Yes	Yes
Animal production	No	No	No	No	No	Yes
Specialty products (e.g., honey)	Yes	Yes	Yes	Yes	Yes	Yes
Farm household indicators						
Generations in farming	3	2	6	4	3	4
Agritourism indicators						
Years in agritourism	60	2	19	25	35	19
Seasonality (months open)	3	3	4	8	5	4
Agritourism offerings						
Educational activities	Yes	Yes	Yes	Yes	Yes	Yes
Farm-based recreation	Yes	Yes	Yes	Yes	Yes	Yes
Recreational self-harvest	Yes	Yes	Yes	Yes	Yes	Yes
Hands-on activities	No	Yes	Yes	Yes	No	No
Nonagricultural recreation (e.g., bounce castles, swings)	Yes	Yes	No	Yes	No	Yes
On-site market offerings						
Farm fresh products	Yes	Yes	Yes	Yes	Yes	Yes
Products from other local farms	Yes	Yes	Yes	No	No	No
Gifts and handcrafts	Yes	Yes	Yes	Yes	No	No

early intervention to positively influence learning trajectories (Gorey 2001) and predicting interests in different subjects including in agriculture (4-H 2017). For the purpose of this manuscript, only parents' responses were included.

Survey Procedures: Instruments and Data Collection

Framed by the TPB, a survey instrument was designed to query participants' intended behavior toward local food using a series of five-point Likert-type scales (1 = *strongly disagree* and 5 = *strongly agree*). Based on the extant literature (Denver and Jensen 2014; Hempel and Hamm 2016; Onozaka, Nurse, and McFadden 2010; Shin et al. 2018), the survey comprised 30 items, 4 items for attitudes toward purchasing local food (e.g., "when I buy local foods I am supporting the local economy"), 3 items about attitudes toward attributes of local food (e.g., "local food tastes good"), 4 subjective norms items (e.g., "people who are important to me usually buy local food"), 7 perceived behavioral control items (e.g., "if I wanted to buy local foods I could buy them in my community"), and 3 personal norms items (e.g., "it is my personal responsibility to get to know local farmers").

Informed by the literature (Campbell, DiPietro, and Remar 2014; W. Chen and Scott 2014; Hempel and Hamm 2016; Shin et al. 2018), consumer intended behavior toward local food was measured through six items assessing likelihood to engage in purchasing behavior (e.g., "how likely or unlikely are you to shop at a farmers' market") and three items assessing likelihood to increase monthly budget to purchase local foods (e.g., "how likely are you to increase your monthly budget by 5% to increase to buy more local food"). These questions allowed the researchers to determine respondents' current intentions to buy local food and measure the changes after the agritourism experience. The items were measured on five-point Likert-type scales of the likelihood to engage in these behaviors (1 = *very unlikely* and 5 = *very likely*). Demographic characteristics collected were age (continuous variable), gender (female, male, other), race or ethnicity (eight categories), level of formal education (five categories ranging from high school degree or less to advanced degree), and annual household income (eight categories ranging from $25,000 or less to $200,000 or more).

Following a pre-post design, the surveys were administered before and after engaging in agritourism experiences. The pre-post survey design allowed to control for participants with varying levels of understanding, perceptions, or behaviors related to local foods because of prior experiences (e.g., previous farm visits, membership in community-supported agriculture). As the purpose of this study was to assess the influence of a single agritourism experience, administering the survey directly before and after the experience allowed to measure changes in several variables regardless of the individual's previous experiences. The pre and post instruments comprised the same variables regarding attitudes, perceived behavioral control, subjective norms, personal norms, local food definition, and consumer intended behavior. Profile characteristics were only queried in the pretest instrument. Families fitting the inclusion criteria were intercepted at the entrance of each study site farm. The

adult(s) were informed about the survey, emphasizing that the study required the participation of parents and children, and were asked about their willingness to participate. Their child(ren)'s age was also confirmed. Those agreeing to participate signed a consent form. Upon completing the pretest, participants received a sticker to be easily identified at the end of their visit so the team could approach them to complete the posttest survey. Researchers also explained that returning to take the posttest survey at the end of the visit would earn participants a five-dollar voucher to spend that day at the on-site farm market as a research incentive.

The surveys were self-administered using both paper surveys and iPads loaded with the instruments in a Qualtrics (web-survey platform) offline application, depending on the preference of the participant. The online and printed surveys were identical in content but formatted differently to maximize the convenience of both methods. The online questionnaire was organized in eight screens and the printed version in a four-page stapled packet. Participants provided an identifier composed of their initials and birth date so pretest and posttest responses could be matched.

Data Handling and Analysis

Data collected via iPad were recorded in the online Qualtrics platform through the offline application software. This same Qualtrics application was used to input responses from paper copies surveys. Data from the pre and post surveys were stored as two separate data sets. The pre and post data sets were downloaded and paired manually using the personal identifiers (initials and birthdate) to create a merged file with both pre and post-survey responses. This merged data set was then exported to the Statistical Package for the Social Sciences (SPSS) for descriptive and multivariate analysis. Before the analysis, the data were cleaned to identify outliers. A total of 394 adults responded to the pretest survey and 333 respondents completed the posttest survey, for an 84.5% completion rate. Only cases that completed the pre and post surveys were analyzed, which resulted in 328 usable cases.

Statistical tests included descriptive statistics, reliability tests, and repeated measures multivariate analysis of variance (Rep-MANOVA). Descriptive statistics were used to depict respondents' sociodemographic characteristics and examine means of individual items associated with the study constructs (i.e., attitudes toward local food, subjective norms, perceived behavioral control, and personal norms). Cronbach's alpha was computed to test the internal consistency and reliability of the multiitem scales. Values exceeding 0.6 were deemed as internal consistent scales and that all items incorporated in the scale measure the same underlying construct (Nunnally 1967). Finally, Rep-MANOVA was conducted to test the changes in attitudes, perceived behavior control, subjective norms, personal norms (hypothesis 1), and intended behavior (hypothesis 2) toward local food that occurred before (pretest) and after (posttest) the agritourism experience ($p < 0.05$). The robustness of Rep-MANOVA to violations of the assumptions (multivariate normality, homogeneity of variances) was not a concern in this analysis given the large sample size (O'Brien and Kaiser 1985). Listwise deletion was employed in individual Rep-MANOVA tests to handle missing data in those cases that did not present any scale completed.

Table 2. Sociodemographic Characteristics of Agritourism Respondents.

Sociodemographic Indicators	Frequency	Percentage
Gender		
Male	76	23.2
Female	251	76.8
Age group		
Younger than 29 years	24	7.5
30-39 years	136	42.3
40-49 years	133	41.4
50 years and older	28	8.8
Level of formal education		
High school or below	36	11.1
Some college	56	17.2
Technical degree	35	10.8
4-year college degree	118	36.3
Postgraduate degree	80	24.6
Race/ethnicity[a]		
White	265	80.8
Hispanic	20	6.1
Asian	15	4.6
Black	14	4.3
Native American	5	1.5
Native Hawaiian	2	0.6
Other	9	2.7
Prefer not to respond	8	2.4
Annual household income		
Less than $25,000	8	2.5
$25,000–$49,999	28	17.9
$50,000–$74,999	69	21.7
$75,000–$99,999	54	17.0
$100,000–$149,999	81	25.5
$150,000–$199,999	28	8.8
$200,000 or more	21	6.6

a. Percentages add to more than 100% because of multiple responses.

Results

Respondents were predominantly women (76.8%), between 30 and 49 years old (83.8%), and held at least a 4-year college degree (60.9%; Table 2). Most respondents identified as white (80.8%), with Hispanic (6.1%) and Asian (4.6%) representing the other race/ethnicities respondents identified the most. Most respondents (57.9%) reported a high annual household income before taxes ($75,000 or more) which is

Table 3. Change in Attitudes, Subjective Norms, Perceived Behavioral Control, and Personal Norms before and after an Agritourism Experience (Rep-MANOVA).

Constructs and Items[a]	*n*	Pre (mean)	Post (mean)	*F* Value	*p* Value
Attitudes toward Buying Local Food ($\alpha = 0.925$)[b]	317	4.56	4.61	7.623	<0.001
Good for the environment	317	4.35	4.49	15.212	<0.001
Support local economies	317	4.67	4.68	0.140	0.709
Preserve agricultural landscapes	317	4.50	4.55	1.599	0.207
Supporting local farmers	317	4.72	4.70	0.630	0.630
Attitudes toward Local Food ($\alpha = 0.713$)[c]	321	4.33	4.43	17.320	<0.001
Local foods taste good	321	4.60	4.62	0.515	0.474
Local foods are fresh	321	4.68	4.65	0.852	0.357
Local foods are easy to find where I shop	321	3.70	4.03	47.65	<0.001
Subjective Norms ($\alpha = 0.868$)[d]	317	4.07	4.11	3.574	0.007
Approve of buying local food	317	4.48	4.43	1.776	0.184
Think that I should buy local food	317	4.16	4.19	0.770	0.381
Usually buy local foods	317	3.73	3.84	7.098	0.008
Would prefer me to buy local foods	317	3.92	3.99	3.386	0.067
Perceived Behavioral Control ($\alpha = 0.874$)[e]	310	4.13	4.23	3.309	0.002
Buy them in my community	310	4.25	4.39	13.091	<0.001
Buy them in the near future	310	4.24	4.34	8.536	0.004
Enough money to afford them	310	4.06	4.11	2.617	0.107
Cooking skills	310	4.23	4.29	4.800	0.029
Know where to buy them	310	4.20	4.29	6.652	0.010
I don't have to travel far to get them	310	3.96	4.11	6.706	0.010
I have enough time to buy them	310	3.98	4.08	10.696	0.001
Personal Norms ($\alpha = 0.852$)[f]	323	4.02	4.09	8.669	<0.001
Get to know local farmers	323	3.52	3.73	20.805	<0.001
Support local foods	323	4.27	4.26	0.074	0.786
Support sustainable farming	323	4.28	4.27	0.066	0.798

a. Measured on a 5-point Likert-type scale (1 = *strongly disagree*, 5 = *strongly agree*).
b. Wilks's lambda = 0.911, $F = 7.623$; $p < 0.001$.
c. Wilks's lambda = 0.860, $F = 17.320$; $p < 0.001$.
d. Wilks's lambda = 0.956, $F = 3.574$; $p = 0.007$.
e. Wilks's lambda = 0.929, $F = 3.309$; $p = 0.002$.
f. Wilks's lambda = 0.925, $F = 8.669$; $p < 0.001$.

above the median for North Carolina ($52,752) and the United States ($60,336; Department of Numbers 2018).

Attitudes, Subjective Norms, and Perceived Behavioral Control Before and After the Agritourism Experience

Cronbach's alphas indicated strong internal reliability of all TPB scales (Table 3): attitudes toward buying local food ($\alpha = 0.925$), attitudes toward local food ($\alpha = 0.713$), subjective norms ($\alpha = 0.868$), perceived behavioral control ($\alpha = 0.874$), and personal norms ($\alpha = 0.852$). Overall, respondents showed positive attitudes toward local foods ($M = 4.56$) and buying local foods ($M = 4.33$), with average pretest scores higher than 4, except for the "Local foods are easy to find where I shop" item ($M = 3.70$). On average, subjective norms ($M = 4.07$), perceived behavioral control ($M = 4.13$), and personal norms also presented high scores ($M = 4.02$), with few items obtaining scores lower than 4. "Get to know local farmers," from the personal norms construct, was the item with the lowest score ($M = 3.52$), although still above the middle point.

The Rep-MANOVA indicated significant changes in the attitudes toward buying local food before and after engaging in agritourism experiences (Wilks's lambda = 0.911, $F = 7.623$; $p < 0.001$). Post hoc univariate tests within this construct indicate that significant differences only occurred for the item "buying local food is good for the environment" ($M_{pre} = 4.35$; $M_{post} = 4.49$; $p < 0.001$). Attitudes toward local food also showed significant changes (Wilks's lambda = 0.860, $F = 17.320$; $p < 0.001$), and the univariate test revealed that the main changes occur in the item "local foods are easy to find where I shop" ($M_{pre} = 3.70$; $M_{post} = 4.03$; $p < 0.001$). Statistical analysis also demonstrated significant changes on the subjective norms (Wilks's lambda = 0.956, $F = 3.574$; $p = 0.007$), with individual significant changes only found in the two items with the lowest initial scores: "significant others usually buy local foods" ($M_{pre} = 3.73$;

Table 4. Change of Consumer Behavior toward Local Food before and after an Agritourism Experience (Rep-MANOVA).

Constructs and Comprising Items[a]	*n*	Pre (mean)	Post (mean)	*F* Value	*p* Value
Likelihood to Increase Budget ($\alpha = 0.723$)[a,b]	307	3.51	3.66	11.204	<0.001
Increase 5% monthly budget	307	4.04	4.25	31.247	<0.001
Increase 10% monthly budget	307	3.57	3.72	14.132	<0.001
Increase 20% monthly budget	307	2.91	3.01	6.074	0.014
Intended Consumer Behavior ($\alpha = 0.840$)[c]	314	4.12	4.20	2.743	0.013
Look at labels to see where food comes from	314	4.07	4.18	8.736	0.003
Buy food with "GotToBeNC" label	314	3.86	3.95	4.960	0.027
Buy local foods	314	4.26	4.33	4.192	0.041
Shop at a farmer's market	314	4.27	4.34	6.503	0.011
Eat at a restaurant that offers local food	314	4.16	4.20	1.175	0.279
Go to a U-pick farm	314	4.11	4.19	4.280	0.039

Note: Rep-MANOVA = repeated measures multivariate analysis of variance.
a. Measured on a 5-point Likert scale (1 = *very unlikely*, 5 = *very likely*).
b. Wilks's lambda = 0.900, $F = 11.204$; $p < 0.001$.
c. Wilks's lambda = 0.949, $F = 2.743$; $p = 0.013$.

$M_{post} = 3.82$; $p = 0.008$) and "people who are important to me would prefer me to buy local foods" ($M_{pre} = 3.92$; $M_{post} = 3.99$; $p = 0.067$).

Perceived behavioral control also presented significant changes before and after respondents engaged in agritourism experiences (Wilks's lambda = 0.929, $F = 3.309$; $p = 0.002$). The univariate test resulted in significant positive changes on several items: "I could buy them in my community" ($M_{pre} = 4.25$; $M_{post} = 4.39$; $p < 0.001$); "Buy them in the near future" ($M_{pre} = 4.24$; $M_{post} = 4.34$; $p = 0.004$); "I have enough money to afford them" ($M_{pre} = 4.06$; $M_{post} = 4.11$; $p = 0.107$); "I know where to buy them" ($M_{pre} = 4.20$; $M_{post} = 4.29$; $p = 0.010$); "I don't have to travel far to get them" ($M_{pre} = 3.96$; $M_{post} = 4.11$; $p = 0.010$); "I have enough time to buy them" ($M_{pre} = 3.98$; $M_{post} = 4.08$; $p = 0.001$). Personal norms also presented a significant change in the before and after measures (Wilks's lambda = 0.925, $F = 8.669$; $p < 0.001$), but only the item "it is my personal responsibility to get to know local farmers" ($M_{pre} = 3.52$; $M_{post} = 3.73$; $p < 0.001$) presented a significant change.

Consumer Behavior toward Local Food before and after the Agritourism Experience

Tests indicated reliable scales of the constructs related to likelihood to increase the budget ($\alpha = 0.723$) and intended consumer behavior ($\alpha = 0.840$) to purchase local food (Table 4). During the pretest, participants on average were likely to increase their budget to purchase local food by 5% ($M = 4.04$) and even by 10% ($M = 3.57$), but not so likely by 20% ($M = 2.91$). Participants also reported strong intended consumer behaviors to purchase local food ($M = 4.12$) during the pretest. Although still obtaining a high score, intention to "buy food with 'GotToBeNC' label" was the item with the lowest score ($M = 3.86$), while respondents were likely to engage in the remaining behaviors toward local food ($M \geq 4.07$).

Rep-MANOVA using pre and post tests showed that an agritourism experience had a positive impact on consumer behavior toward local food, with all tests yielding strong statistical power (≥0.869). Statistically significant differences were found in the likelihood to increase monthly budget to buy local food (Wilks's lambda = 0.900, $F = 11.204$, $p < 0.001$) and within all their comprising items: "Increase monthly budget by 5%" ($M_{pre} = 4.04$; $M_{post} = 4.25$; $p < 0.001$); "Increase monthly budget by 10%" ($M_{pre} = 3.57$; $M_{post} = 3.72$; $p < 0.001$); and "Increase 20% monthly budget" ($M_{pre} = 2.91$; $M_{post} = 3.01$; $p = 0.014$). The largest impact within these three constructs was on likelihood to increase monthly budget by 5% with a difference of 0.21, followed by 10% with a difference of 0.15 and 20% increase in monthly budget with a change of 0.10 points on a five-point Likert-type scale, highlighting the biggest treatment impact on the lowest amount of budget change.

Intended consumer behavior toward local food also presented significant changes (Wilks's lambda = 0.949, $F = 2.743$; $p = 0.013$). Specifically, changes between the pre and post occurred for the following items: "Look at labels to see where food comes from" ($M_{pre} = 4.07$; $M_{post} = 4.18$; $p = 0.003$); "Buy food with GotToBeNC label" ($M_{pre} = 3.86$; $M_{post} = 3.95$; $p < 0.027$); "Buy local foods" ($M_{pre} = 4.26$; $M_{post} = 4.33$; $p < 0.041$); "Shop at a farmer's market" ($M_{pre} = 4.27$; $M_{post} = 4.34$; $p = 0.011$); "Go to a U-pick farm" ($M_{pre} = 4.11$; $M_{post} = 4.19$; $p = 0.039$). No significant changes were found for the item "Eat at a restaurant that offers local food" ($M_{pre} = 4.24$; $M_{post} = 4.36$; $p = 0.279$).

In summary, statistical results indicate that all study hypotheses were supported. Specifically, results indicate that an agritourism experience has a positive impact on attitudes

related to local food and purchasing local food (hypothesis 1-A), subjective norms related to purchasing local food (hypothesis 1-B), perceived behavioral control related to purchasing local food (hypothesis 1-C), and personal norms related to local food (hypothesis 1-D). Likewise, an agritourism experience has a positive impact on local food intended purchasing behavior (hypothesis 2).

Discussion

This study assessed the contribution of agritourism to LFS by measuring whether agritourism experiences influence consumers' intentions to purchase local food. Assessments centered on U-pick activities (e.g., pumpkins, strawberries) under the assumption that direct contact with local food may enhance participants' views of local foods, even among those with positive attitudes. Results reveal that direct contact with local foods through agritourism influenced visitor's likelihood to increase their budget and their likelihood to engage in local food consumption. By measuring the impact of one single farm visit on participants' attitudes and intentions, this study pioneers the investigation of how as little as one farm visit may promote desirable behaviors toward local food systems. In doing so, this research answers the call for finding new ways to promote dialogues and spaces that change people's behavior to support a more local, sustainable food system (Bos and Owen 2016) and explore how desired behavioral changes emerge from being involved with sustainable and inclusive agri-food systems (Selfa and Qazi 2005).

The extant literature concludes that visitors seek agritourism experiences because they are motivated to learn about agriculture and local foods (Xu et al. 2014). Study findings indicate that agritourism fulfills such desire as respondents held strong positive attitudes toward buying local food and toward the attributes of local food before engaging in agritourism experiences. These findings indicate that agritourism experiences can go beyond fulfilling the interest in agriculture and local food, to influence consumer behavior to increase local food consumption. This provides another contribution of agritourism to communities. Based on the TPB (Ajzen 2015), as agritourism served to strengthen visitors' attitudes especially pertaining to the positive effect of buying local food for the environment and its easy access, it may be important for encouraging subsequent purchasing of local foods. The overall reduced statistical change in attitudes is encouraging considering participants already had strong positive attitudes toward local food prior to agritourism experiences. This is especially true given that the largest gains in attitudes were among items with the lowest scores. Thus, results indicate that agritourism fosters positive attitudes toward local foods, especially among those who come into agritourism experiences less connected to LFS, as the largest impact from the experiences was observed on the items with the lowest prescore (e.g., "local food is easy to find where I shop," "it is my personal responsibility to get to know local farmers").

The group activities that are hallmarks of agritourism experiences may help explain the gains in subjective norms. Agritourism farms often provide opportunities for families to share experiences (Barbieri 2010), especially related to U-pick (Tew and Barbieri 2012). These group activities contribute to the overall satisfaction of the agritourism experience (Choo and Petrick 2014; Liang 2017) because they fulfill visitors' psychosocial needs (Cassia et al. 2012; M. F. Chen and Tung 2014; Choo and Petrick 2014; Feagan 2007). This study adds to such psychosocial contribution as results indicate that agritourism also builds social support for LFS through fostering subjective norms toward local food purchasing. As such, agritourism providers should consider encouraging more social interaction among participants.

Agritourism often provides and promotes opportunities to buy local foods, which could explain why visitors reported a higher perceived behavioral control after the experience. All participating farms had an on-site market for local products, which may have been reduced any perceived barriers to local food purchasing, particularly related to its accessibility. An important contribution of agritourism deserving future investigation is its potential to bridge the gap of local food sales points. Given that family farms struggle to increase direct sales because of the difficulty of providing accessible pick-up points while ensuring economic viability (McGuirt et al. 2019), agritourism can become an economically efficient space to make those products available to visitors. Evidence indicates that other barriers, such as the price of local foods or closer availability at retail outlets to consumers' homes, may remain a considerable barrier to local food consumption (McGuirt et al. 2014; Shi and Hodges 2016). As this study found that consumers increased their perceived behavioral control over potential barriers toward purchasing local food, it can be maintained that agritourism can be used to reduce those negative perceptions constraining local food consumption.

Agritourism may provide opportunities for visitors to make meaningful connections with LFS as results showed increases in personal norms around local food consumption. Scholars have suggested that one of the most important aspects of agritourism is providing opportunities for consumers to get to know their local farmers (Choo and Petrick 2014). The respondents' perceived responsibility to get to know local farmers demonstrated the greatest change, which validates the capacity of agritourism to reconnect producers and consumers. This result indicates that agritourism may trigger attention to the social dimension of food production and create a sense of responsibility toward consumption decisions.

Given that one of the largest barriers to local food consumption relates to price (McGuirt et al. 2014), a major study finding was that respondents were more likely to increase

their budgets for purchasing local foods, which is crucial for LFS's sustainability (Berg and Preston 2017). As agritourism experiences provide product information and increase awareness of local food, it may nurture visitors' preference for these products, which justifies higher prices (Campbell, DiPietro, and Remar 2014; Wägeli, Janssen, and Hamm 2016). Although the percentage of participants willing to increase their budget by 10% or 20% was less pronounced as compared to a 5% increase, the significant increase in all three budget-points after engaging in agritourism is worth noting. These results not only reinforce the capacity of agritourism to reduce purchasing barriers of local foods but calls for future research to identify specific attributes of agritourism experiences that can further encourage consumers to pay more for local food. For example, since this study only sampled agritourism farms offering hands-on agricultural experience (U-pick), it would be useful to compare impacts on willingness to pay among different types of agritourism activities (e.g., leisure tours).

Study results related to the label preferences of farm visitors suggest that agritourism experiences offer a space for the interaction between producers and consumers that labels or slogans on their own cannot replicate. All participating farms displayed the "GotToBeNC" label (North Carolina official initiative to expand markets for the state agricultural products), which may have supported the gains in the likelihood that participants would seek out products with that label. In the on-farm context, the overall low score of this item may be in line with the limited impact of labels on local food consumption (Knight 2013), consumers' trust on transparent on-site direct exchanges directly with the producer (Papaoikonomou and Ginieis 2017), or a lack of familiarity with the label itself. Additionally, these findings suggest that labels might be more effective in a grocery store or less direct supply context than in an agritourism farm. Yet, significantly increased recognition after the agritourism experience indicates that seeing the label on-site may have built up awareness and credibility of the brand at the farm, which raises the need to assess such increased awareness in other settings (e.g., farmers markets, grocery stores). Therefore, agritourism experiences may help to increase the effectiveness of LFS marketing campaigns focusing on messaging and brand recognition.

The main limitation of this study is that intentions, rather than behavior, were measured. Intentions are antecedents of behavior (Conner and Armitage 1998) and are the next best alternative in the cases when measuring behavior proves challenging. Yet, future studies should include follow-up surveys to gauge the participants' actual local food consumption behaviors over time. Similarly, future studies should consider controlling for the impact of past farm visits or levels of locavorism to enhance the understanding of the impact of agritourism experiences on intentions to purchase local food. A second limitation relates to the sample, which was composed predominantly of white, highly educated, and high income–earning individuals, which already had positive attitudes toward local foods and presumably fewer barriers to purchase them. Thus, future research should design strategies to target more diverse samples as well as individuals who may have reduced access to local food. Sampling agritourism farms located in socioeconomically vulnerable areas or that present a racial/ethnic diversity could help accomplish this. Another way to include a more diverse population would be targeting field trips of schools with a high percentage of underrepresented groups. Although this study provided evidence about the impact of agritourism experiences on local food consumption by selecting farms with comparable offerings, little is known about other agritourism experiences or settings (e.g., leisure farm tours, Easter egg hunts, aquaculture farms). Therefore, future studies could compare farms with different offerings and determine the experiences with a larger impact on the likelihood to buy local food. Finally and more generally, future research could explore the impact of tourism experiences on other food consumption-related behaviors to assess the role of tourism experiences as spaces of reflection toward food (Mair and Sumner 2017).

Conclusion

This study represents the first time the contribution of agritourism to LFS through increasing consumers' likelihood to buy local food has been measured. By covering the two main agritourism seasons of a hands-on agricultural activity (U-pick) in six different farms across North Carolina, this study not only measured the impact of agritourism experiences on local food consumption but also provided insights into local food consumer preferences among farm visitors in North Carolina. The study findings support the effectiveness of agritourism to reconnect agricultural producers and consumers through agritourism experiences, which in turn can contribute to the economic, social, and environmental sustainability of LFS. As such, this study broadens the scholarly understanding of the benefits of agritourism and its contribution to LFS.

As family farms struggle to be competitive in the market, agritourism offerings not only increase revenues of the farm through income diversification (Tew and Barbieri 2012) but they also make local foods more marketable, providing benefits for local farms. This study indicates that the impacts of agritourism may reverberate far beyond the confines of the experience itself, by encouraging local food consumption in visitor's daily lives. Providing experiences that create conscious consumers is a crucial step to strengthen LFS (Allen 2010; W. Chen and Scott 2014; Feldmann and Hamm 2015), and many have suggested that agritourism has that potential (Barbieri, Stevenson, and Knollenberg 2019; Kline, Barbieri, and LaPan 2016). Though more work is needed to fully understand the mechanisms, this research pioneers the exploration of the role of tourism experiences in promoting desirable behaviors.

Study results offer several management suggestions to take advantage of the marketing role of agritourism. Agritourism operators should highlight the opportunities for family engagement and education in on-farm experiences and ensure activities allow for all family members to participate. This may also include facilitating access for people with disabilities, designing experiences to encourage exchange between families through signage, and programming age-appropriate activities prompting the parents–children interaction (e.g., educational scavenger hunts, special themed events). These interventions may help with visitor recruitment and to foster social support for local food purchases.

Additionally, increasing opportunities for interaction with farmers may trigger the appreciation of the social dimension of local food. One of the main motivations for local food consumption is the desire of visitors to support local farmers, and fostering these connections may help encourage consumers to navigate barriers to local food purchase, including price. This study indicates that agritourism experiences influence the likelihood to increase monthly household budget to buy local foods, which is another indicator of the impact of agritourism to strengthen the producer–consumer relationship. Altogether, this study advances the existing understanding of the broad impacts of agritourism, points to the power of agritourism to contribute to the community and societal well-being by supporting LFS, and offers concrete ways that agritourism operators may accelerate this potential.

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