A socio-demographic examination of the perceived benefits of agroforestry

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Abstract Agroforestry has been suggested to produce an array of ecological and socio-economic benefits that not only reach their adopters, but society as a whole. In spite of strong evidence of the benefits of agroforestry, there is a lack of understanding of the public perceptions of those benefits, which prevents the development of benefit-based promotion strategies of agroforestry products. Thus, this study examines the awareness of these benefits among residents and explores whether perceptions vary across individuals with different socio-demographic characteristics. An on-line platform was used to survey three panels of residents from Missouri, Pennsylvania and Texas. Overall, respondents had a neutral perception of the importance of the ecological and socio-economic benefits that agroforestry farms provide to society when compared to farms employing conventional agricultural practices. These results stress the need to increase public awareness of agroforestry practices and their benefits to more strategically position their products among the final consumer. Gender, education level, and residence location were significantly associated with the perceived ecological benefits produced by agroforestry farms and to a lesser extent with the socio-economic benefits. Results also showed that females and young individuals have a greater awareness of several benefits produced by agroforestry farms. Critical marketing implications to stimulate the purchase of agroforestry products (e.g., berries, nuts) among specific groups of consumers are discussed.

Keywords Agroforestry · Benefits · Residents' perceptions

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Introduction

Agroforestry is an intensive land-use management agricultural practice that intentionally combines woody perennials with agricultural crops and/or livestock (Erdman 2005; Gold and Garrett 2009). Five types of agroforestry practices are usually recognized in North America: riparian and upland buffers; windbreaks, including shelterbelts, timber belts and hedgerows; alley cropping; forest farming;

and silvopasture (Gold and Garrett 2009). The literature also recognizes a sixth type of agroforestry practice, *Special Applications*, which involves the management of trees/shrubs for solving special concerns (e.g., disposal of animal waste, filtering irrigation tail water) while producing woody crops (Schoeneberger 2009).

The biological interactions occurring in agroforestry systems produce a diversity of benefits, ranging from those related to farm agricultural ecosystem to those reaching the broader society and economy (Benayas et al. 2008; Gold and Garrett 2009; Lassoie et al. 2009). Thus, it is frequently recognized as a sustainable management practice (Gold and Garrett 2009) that facilitates farm transition to a strong multifunctionality, characterized by the maximization of the farm functions (Barbieri and Valdivia 2010b). Although some potential risks have been identified with the adoption of agroforestry, such as fluctuations in the production value (Caveness and Kurtz 1993; Sirrine et al. 2010), these are outweighed by the overall benefits produced through the series of interrelations and interactions that agroforestry produce (Gold and Garrett 2009; Lassoie et al. 2009).

Agroforestry produces a myriad of benefits contributing to the *ecological* and *socio-economic* sustainability of the farmland and their surrounding landscapes (Gold and Garrett 2009). The *Ecological* benefits are the most researched, thus recognized in the literature. Jose (2012) condensed the five major roles of agroforestry in conserving biodiversity: providing an habitat for species with tolerance to certain levels of disturbance; preserving germplasm of sensitive species; reducing the rates of conversion of natural habitats; providing functional connectivity of rural landscapes by creating corridors between habitat remnants; and preventing the degradation and loss of habitats. Although many of the benefits are mostly evident at the farmland level (e.g., retention of soil nutrients; reduced water erosion), benefits derived from some practices reach society at large. The incorporation of trees in the farmland (e.g., forest farming, windbreaks) for example, also serves to mitigate greenhouse gas emissions by augmenting carbon sequestration on agricultural lands (Pandey 2007; Schoeneberger 2009).

The *Socio-economic* benefits associated with agroforestry also transcend to overall society. From the social standpoint, agroforestry helps to improve the quality of life in farming localities, control urban sprawl, provide educational resources, and beautify rural landscapes (Benayas et al. 2008; Burel 1996; Cable 1999; Francis et al. 2003; Gao et al. 2013; Lovell et al. 2010; Schultz et al. 2009). Agroforestry practices also enable consumptive and non-consumptive recreational opportunities for landowners and visitors (Barbieri and Valdivia 2010a; Cable 1999; Garrett et al. 2009; Kenwick et al. 2009; Kulshreshtha and Kort 2009), especially when associated with treed farmscapes (Lovell et al. 2010; Schultz et al. 2009). From the economic standpoint, agroforestry can reduce production costs and increase profits of farms. Most cited cost reductions refer to the decrease of production inputs in terms of chemicals, water, energy, labor, and provision of natural shelters (Benayas et al. 2008; Lassoie et al. 2009; Raedeke et al. 2003). In terms of profitability, agroforestry can boost the net value of production through the diversification of crops and other farm outputs (e.g., fuelwood), and the increase of the production area above and below ground (Cable 1999; Chamberlain et al. 2009; Lassoie et al. 2009; Schultz et al. 2009). Such economic benefits can extend to local economies by creating employment opportunities for local residents (Benayas et al. 2008; Gold and Garrett 2009).

Although the breadth of ecological and socio-economic benefits attributed to agroforestry as aforementioned, there is a lack of understanding of public perceptions of such benefits. Thus, this study examines the awareness of agroforestry benefits among residents and explores whether these perceptions vary across individuals with different socio-demographic characteristics. Revealing how residents perceive agroforestry benefits not only advances our knowledge of consumer's awareness of agroforestry, but provides substantiated evidence to develop a benefits-based promotion of agroforestry products. Exploring whether those perceptions are associated with socio-demographic characteristics is important given that gender, age, education and income shape people's perceptions (Savage 1993; Xu et al. 2006).

Results presented in this paper are part of a larger project that aimed to understand residents' perceptions of agroforestry landscapes in terms of visual preferences and perceived benefits. The objectives specifically addressed in this paper are: (1) to assess the perceived benefits of agroforestry farms as compared to conventional farms; and (2) to assess whether these

perceptions are associated with respondents' gender, age, education level, annual household income, and residence proximity to an urban cluster.

Research methods

Sampling and survey procedures

Given the exploratory nature of this study and to guarantee a minimum sample size for statistical analysis, this study surveyed three non-random panels of residents from Missouri ($n = 250$), Pennsylvania ($n = 250$), and Texas ($n = 250$) using an online platform; thus results are not intended for generalization purposes but to explore perceptions for further scrutiny. Decision on the non-random nature and size of the sample was made based on economic and statistical considerations. These panels were composed by female and male adult residents from the aforementioned states representing different ages and income levels; specific membership or association with any type of public or private organization (e.g., agricultural cooperatives) was not purposefully sought as to reduce any types of bias (e.g., higher awareness with agroforestry practices). The panels were purchased from a marketing agency specialized in worldwide research systems; a fee was paid for each completed response.

After scrutinizing all fifty states, Missouri, Pennsylvania and Texas were selected for this study because they best fit three main criteria. First, they represent a diversity of agricultural regions, which was deemed important to control for different representations of *Conventional* farms across participants; Missouri belongs to the Corn Belt, Pennsylvania stands in the Northeastern agricultural region, and Texas is located in the Southern Plains region (USDA (United States Department of Agriculture) 2009). Second, these states share similar agricultural attributes in terms of agricultural land used (at least 20 % of their total land is dedicated to agriculture) and farm size distribution (40 % small farms; 15 % large farms) as officially reported (USDA: NASS (United States Department of Agriculture: National Agriculture Statistics Service) 2007). This criterion was important to ensure that residents across the three states had comparable exposure to agricultural landscapes and settings. In addition, residents from those states have

similar age distribution, formal education level, and median household incomes (U.S. Census Bureau 2007).

For the purpose of this manuscript, data gathered included participants' socio-demographic characteristics (gender, education level, age, pre-tax household income, and residence proximity to an urban cluster) and their perceptions about 14 benefits that farmlands provide to society. As for socio-demographic characteristics, gender was queried in a dichotomous form (female/male); a write-in open format was used to collect participant's age; education level was collected through six categories (high school graduate; some college; 2-year college degree; four-year college degree; post-graduate studies; other); pre-tax household income was queried through eight categories ranging from "less than $25,000" to "$200,000 or more"; and residence proximity to an urban area of at least 50,000 pop was queried in a five-point scale (I live in a 50,000 pop. city; less than 5 miles; 5–9 miles; 10–29 miles; 30–59 miles).

With respect to the perceived benefits, participants were asked about their perceptions of six ecological benefits (e.g., protect natural habitats, reduce the overall use of chemical use) and eight socio-economic benefits (e.g., create jobs in rural areas, provide recreational activities and opportunities) commonly associated with agroforestry practices (Gold and Garrett 2009; Lassoie et al. 2009; Pandey 2007). Specifically, participants were asked to rate which type of farmland (agroforestry farms vs. conventional farms) provide more benefits to society in a five-point scale ranging from negative two ("Conventional farms are much more important") to positive two ("Agroforestry farms are much more important") with zero ("Both are equally important") as the middle point. Both types of farms were defined at the beginning of this section as follows: "Agroforestry farms integrate trees or shrubs into their farming (crops/livestock) production"; and "Conventional farms specialize in the production of crops, livestock or both".

The survey was launched in August 2011. The contracted marketing agency emailed the survey link to their panel of residents across the three states. When clicking on the survey link, participants were first exposed to a landing page that introduced the study purpose, confidentiality and privacy protocols. Participants then accessed a filter question to capture their state residence; those residing in a state other than

Missouri, Pennsylvania or Texas were automatically exited from the survey. The survey was closed once the study quota was reached. Reporting response rate is not applicable in this case as services contracted with the marketing agency was based on a fixed number of completed responses (250 per state); this method has been used in exploratory online studies among residents are surveyed (e.g., Gil Arroyo et al. 2013).

Statistical analysis

This study used Statistical Package for the Social Sciences (SPSS) version 19 to conduct descriptive and inferential statistics. Descriptive analyses were first conducted to assess the importance of the benefits that agroforestry and conventional farms are perceived to provide to society. Then, Cronbach's alphas of the ecological and socio-economic benefits were computed to assess their internal reliability; thereafter, mean scores for each type of benefit were calculated. A series of standard multiple linear regressions were then conducted to explore associations between socio-demographic attributes and respondents' perceptions of the ecological and socio-economic benefits produced by agroforestry farms. In this sense, a positive beta (β) statistic indicates that agroforestry farms are perceived to provide more benefits to society, while a negative beta indicates that conventional farms are perceived to produce more benefits. Multicollinearity among independent variables was examined to make sure that variance inflation factor (VIF) statistics were above the conservative minimum scores (VIF > .10) and tolerance statistics were below conservative maximum scores (<10.0; Mertler and Vannatta 2005).

Results

The sample was largely represented by females (70.9 %) and by individuals with little formal education (35.9 % had a high school degree or less), and low household incomes (48.0 % earned less than $35,000 annually), which may be associated with the economic crisis affecting the U.S. at the time of the study (Table 1). The survey captured respondents representing different age groups (M = 47 years old). Over one-third (37.9 %) of respondents lived in an urban

Table 1 Socio-demographic profile of respondents

	n	%
Gender (n = 741)		
Male	216	29.1
Female	525	70.9
Age (n = 739)		
18–29 years old	158	21.5
30–39 years old	111	15.0
40–49 years old	107	14.4
50–59 years old	171	23.1
60–69 years old	123	16.6
70 years or older	69	9.2
Education level (n = 743)		
High school graduate or less	267	35.9
Some college	220	29.6
College degree (2 or 4 year degree)	200	26.9
Post-graduate studies	56	7.5
Annual household income before taxes (n = 736)		
Less than $25,000	205	27.9
$25,000 - $34,999	148	20.1
$35,000 - $49,999	128	17.4
$50,000 - $74,999	137	18.6
$75,000 or more	118	16.0
Residence proximity to an urban area (n = 746)[a]		
Live in a 50,000 pop. city	283	37.9
Less than 10 miles	105	14.1
10 - 29 miles	152	20.4
30 - 59 miles	110	14.7
60 miles or more	96	12.9

[a] An urban area was defined as having at least 50,000 people

area with at least 50,000 residents, 34.5 % lived less than 30 miles away, and the remaining 27.6 % lived at least 30 miles away.

Perceived benefits of agroforestry and conventional farms

Ecological ($\alpha = 0.829$) and socio-economic ($\alpha = 0.840$) benefits examined in this study showed high internal reliability (Table 2). Overall, respondents perceived that agroforestry farms are slightly more important than conventional farms in producing ecological benefits ($M_{Eco} = 0.3$; $SD = 0.7$). Higher perceptions (although still close to the middle point) were found regarding the role of agroforestry farms in protecting natural habitats

Table 2 Perceived benefits of agroforestry and conventional farms

Perceived benefits	n	Conventional farms are much more important (%)	Conventional farms are somewhat more important (%)	Both are equally important (%)	Agroforestry farms are somewhat more important (%)	Agroforestry farms are much more important (%)	M^a	SD
Ecological benefits (α = 0.829)								
Protect natural habitats	746	5.0	3.1	59.4	16.4	16.2	0.4	1.0
Conserve wildlife	746	5.2	6.0	53.4	18.6	16.8	0.4	1.0
Alleviate climate change	745	3.1	3.4	62.3	16.8	14.5	0.4	0.9
Protect natural resources	743	3.6	3.5	63.4	16.2	13.3	0.3	0.9
Reduce farm waste and odors	740	4.6	7.2	61.5	15.0	11.8	0.2	0.9
Reduce the overall use of chemicals	741	5.9	5.7	61.8	14.4	12.1	0.2	0.9
Ecological Mean (M_{Eco})							0.3	0.7
Socio-economic Benefits (α = 0.840)								
Provide scenic beauty to the countryside	743	4.2	4.2	62.3	14.0	15.3	0.3	0.9
Educate the public about nature and agriculture	745	3.8	6.2	64.7	14.6	10.7	0.2	0.9
Provide a diversity of agricultural products	744	6.2	9.4	56.7	17.9	9.8	0.2	0.9
Maximize the use of agricultural lands	743	6.6	9.3	60.7	12.1	11.3	0.1	1.0
Provide recreational opportunities	747	5.2	8.2	67.1	12.4	7.1	0.1	0.8
Enhance rural dwellers' quality of life	743	6.7	8.3	66.6	10.8	7.5	0.0	0.9
Create jobs in rural areas	743	6.1	7.0	72.4	8.6	5.9	0.0	0.8
Preserve rural heritage and traditions	743	9.7	10.2	65.8	7.5	6.7	−0.1	0.9
Socio-economic Mean (M_{Soc})							0.1	0.6

[a] Measured on a five-point scale ranging from "Conventional farms are much more important (−2) to "Agroforestry farms are much more important" (2)

such as wetlands or prairies ($M = 0.4$; $SD = 1.0$), conserving wildlife such as deer or quail ($M = 0.4$; $SD = 1.0$), and alleviating climate change ($M = 0.4$; $SD = 0.9$). Higher perceptions of agroforestry farms were less pronounced regarding the protection of natural resources such as soil and water ($M = 0.3$; $SD = 0.9$), the lesser use of chemicals such as fertilizers or pesticides ($M = 0.2$; $SD = 0.9$) and the reduction of farm waste and odors ($M = 0.2$; $SD = 0.9$).

Overall, respondents perceived that both types of farms are equally important in providing socio-economic benefits to society ($M_{Soc} = 0.1$; $SD = 0.6$), especially in maximizing the use of agricultural lands ($M = 0.1$; $SD = 1.0$), providing recreational

opportunities ($M = 0.1$; $SD = 0.8$), enhancing the quality of life of rural residents ($M = 0.0$; $SD = 0.9$), creating jobs in rural areas ($M = 0.0$; $SD = 0.8$), and preserving American rural heritage and traditions such as historic barns ($M = -0.1$; $SD = 0.9$). Over one quarter of respondents (29.3 %) though perceived that agroforestry farms are more important than conventional ones in providing scenic beauty to the countryside ($M = 0.3$; $SD = 0.9$). Farms practicing agroforestry were also perceived slightly more important than conventional farms in educating the public about nature and agriculture ($M = 0.2$; $SD = 0.9$) and in producing a diversity of agricultural products such as food or wood ($M = 0.2$; $SD = 0.9$).

The role of socio-demographics on the perceived benefits of agroforestry farms

When all socio-economic benefits were examined together (M_{Eco}), regression tests showed that respondents' socio-economic characteristics shape their perceptions of the ecological benefits that agroforestry farms provide to society ($R^2 = .017$; $p = .030$; Table 3). After controlling for other variables, female respondents ($\beta = .077$; $p = .044$), and those with higher levels of education ($\beta = .085$; $p = .034$) or living farther away from an urban area ($\beta = .065$; $p = .088$) tend to have stronger perceptions of the importance of agroforestry farms in delivering ecological benefits to society. Although, results show that respondents' socio-economic characteristics are not significantly associated with the perceived socio-economic benefits (M_{Soc}) of agroforestry farms ($R^2 = .012$; $p = .146$), when controlled for other variables, females had a greater appreciation of the socio-economic benefits of agroforestry farms.

When the six ecological benefits were examined individually, multivariate regressions resulted in four significant models indicating that socio-demographic characteristics are associated with respondents' perceptions of the importance of agroforestry farms (where conventional farms were the baseline for comparison) to: Protect natural habitats ($R^2 = .017$; $p = .036$), alleviate climate change ($R^2 = .022$; $p = .009$), protect natural resources ($R^2 = .030$; $p = .001$),

and reduce farm waste and odors ($R^2 = .021$; $p = .013$; Table 4). When controlling for other variables, results show that females have a greater awareness of the role of agroforestry farms in protecting natural resources ($\beta = .166$; $p < .001$), reducing farm waste and odors ($\beta = .067$; $p = .082$) and reducing the overall use of chemicals ($\beta = .070$; $p = .073$). The older the respondent the less they perceive that agroforestry farms are more important than conventional farms in protecting natural habitats ($\beta = -.083$; $p = .033$) and reducing farm waste and odors ($\beta = -.081$; $p = .039$). Education level showed a positive association with the perceived benefits of agroforestry farms related to protecting natural habitats ($\beta = .110$; $p = .007$), conserving wildlife ($\beta = .096$; $p = .018$), and alleviating climate change ($\beta = .123$; $p = .003$). Household income was negatively associated with the role of agroforestry farms in alleviating climate change ($\beta = -.092$; $p = .020$), while the farthest the resident lived from an urban center, the more they acknowledged the importance of agroforestry farms in reducing farm waste and odors ($\beta = .078$; $p = .041$).

Although non-significant associations were found between socio-demographic indicators and the overall socio-economic benefits mean as aforementioned, when examined their comprising benefits individually multivariate regressions resulted in two significant models, indicating that socio-demographics influence the perceived importance of agroforestry farms for maximizing the farmland use ($R^2 = .021$; $p = .011$) and creating jobs in rural areas ($R^2 = .017$; $p = .043$; Table 5). Females had stronger perceptions of the role of agroforestry for both benefits ($\beta = .107$, $p = .006$ and $\beta = .119$; $p = .002$, respectively) and on enhance the quality of life or rural residents ($\beta = .076, p < .10$). When controlled for other socio-demographic variables, education level was also found to be positively associated with the perceived importance of agroforestry farms to diversify agricultural production ($\beta = .084$; $p = .041$) but negatively associated with the preservation of rural heritage ($\beta = -.068, p < .10$).

Table 3 Multiple linear regressions of socio-demographic characteristics on the overall perceived ecological and socio-economic benefits produced by agroforestry farms

Independent variables: socio-demographics	Dependent variables (standardized β and significance)	
	Ecological benefits (M_{Eco})	Socio-economic benefits (M_{Soc})
Female	.077 **	.082 **
Age	−.044	−.042
Education level	.085 **	.011
Household income	−.036	−.003
Proximity to an urban area	.065 *	.038
R^2	.017	.012
p value	.030	.146

* $p < .10$

** $p < .05$

Discussion and conclusions

This study assessed residents' perceptions of agroforestry benefits, having conventional farms as a baseline for comparison. Overall respondents perceived that

Table 4 Multiple linear regressions of socio-demographic characteristics on the perceived ecological benefits produced by agroforestry farms

Independent variables: socio-demographics	Dependent variables: ecological benefits (standardized β and significance)					
	Protect natural habitats	Conserve wildlife	Alleviate climate change	Protect natural resources	Reduce farm waste and odors	Reduce overall chemicals use
Female	.032	−.032	.061	.166***	.067**	.070*
Age	−.083**	.024	−.033	−.003	−.081**	−.026
Education level	.110**	.096**	.123***	−.010	.033	.006
Household income	−.018	.005	−.092**	−.027	−0.41	−0.19
Proximity to an urban area	−.021	.053	.050	.026	.078**	.038
R^2	.017	.014	.022	.030	.021	.008
p-value	.036	.094	.009	.001	.013	.344

* $p < .10$

** $p < .05$

*** $p < .005$

Table 5 Multiple linear regressions of socio-demographic characteristics on the perceived socio-economic benefits produced by agroforestry farms

Independent variables: socio-demographics	Dependent variables: socio-economic benefits (standardized β and significance)							
	Provide scenic beauty	Educate the public	Diverse ag. production	Maximize farmland use	Provide recreation	Enhance rural quality of life	Create jobs in rural areas	Preserve rural heritage
Female	.012	−.016	.011	.107**	−.011	.076*	.119***	.040
Age	−.051	−.031	−.014	−.027	.001	−.059	−.002	−.038
Education level	.019	.062	.084**	−.041	.029	−.038	.026	−.068*
Household income	.003	.008	−.033	−.009	−.018	−.007	.003	.005
Proximity to an urban area	−.034	.043	.016	.063	.007	.024	.046	.008
R^2	.004	.006	.006	.021	.001	.015	.017	.009
p-value	.717	.550	.504	.011	.984	.071	.043	259

* $p < .10$

** $p < .05$

*** $p < .005$

both conventional and agroforestry farms are equally important in providing ecological and socio-economic benefits to society, which could be associated with a lesser familiarity of agroforestry in North America even among farmers (Gold and Garrett 2009; Lassoie et al. 2009). These results stress the need to increase public awareness of the benefits of agroforestry, so as to add a competitive advantage to their products (e.g., chestnuts, pine straw) when approaching their customers. The slightly higher importance of agroforestry farms in protecting natural habitats, conserving wildlife, alleviating climate change and diversifying the

agricultural production among more educated respondents may be associated with their overall greater awareness of these pressing natural resource issues (Fiallo and Jacobson 1995). However, they may also have intuitively emerged from the definition of agroforestry provided in the survey, suggesting a competitive advantage for agroforestry farms that directly reach their consumers through direct sales or agritourism activities.

The examination of the role of socio-demographic attributes in residents' perceptions of agroforestry benefits, provide insights to: (1) target specific groups

of consumers for stimulating the purchase of agroforestry products, and (2) disseminate the superior role of agroforestry in producing an array of ecological and socio-economic benefits. For market stimulation, the stronger understanding of the benefits of agroforestry among females suggests a good opportunity for agroforestry products given that women are the main decision makers in household purchases (O'Cass 2000; Wolgast 1958). Targeting women is even more important for agroforestry farms engaged in agritourism given the role of women in deciding family travels and the growing market of ladies getaways (Mottiar and Quinn 2004). Young consumers also appeared in this study as an appealing market given their greater awareness of the benefits of agroforestry. To maximize the market positioning of agroforestry products among female and young consumers, it is advisable that marketing efforts refer to the many benefits that agroforestry produces, so as to capitalize on the stronger social and environmental awareness that both types of consumers seem to have (Fiallo and Jacobson 1995; Hunter et al. 2004).

Evidently this study major conclusion is that greater effort is needed to spread among the public the superior role of agroforestry in producing an array of ecological and socio-economic benefits to society. On this end though, this study sheds light on directing efforts to inform the public about these benefits. Once more, given their more social and environmental awareness, females and young individuals appear as groups more receptive to this information. In this regard, agriculture-based educational programs imparted among youth (e.g., children's gardening programs, Future Farmers of America—FFA, on-farm summer camps) may be suitable outlets to inform future consumers about agroforestry as a form of sustainable farming, thus helping to form more environment-friendly future consumers.

Lessons emerged from this study about the dissemination of agroforestry benefits, especially for developing or increasing market opportunities, should be interpreted with caution. Although using a panel of residents from three states served to explore preliminary perceptions of agroforestry, its non-random nature cautions generalizations. It is worth mentioning that the greater presence of females in the sample should not be perceived as limitation (although such unbalance was controlled in the statistical analyses performed) because it allowed a greater insight from female consumers, which is critical taking into consideration the primary role as purchase decision-makers for different types of products (O'Cass 2000; Mottiar and Quinn 2004; Wolgast 1958).

By exploring residents' perceptions of the importance of agroforestry and examining socio-demographic attributes associated with those perceptions, this study has paved the road for informing the public about the benefits of agroforestry by identifying specific audiences (i.e., female, young, more educated consumers) who may be more receptive to products derived from more sustainable farming practices. At the same time, these results have also identified areas in which more effort is needed to disseminate the benefits of agroforestry, especially concerning its capacity to produce an array of socio-economic benefits. Finally, results from this study are also important for those agroforestry farms offering agritourism activities since information provided about the characteristics of the [potential] tourists can serve to develop targeted marketing strategies.

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