

Agritourism - A Potential Linkage Between Local Communities and Parks to Maintain Sustainability

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Abstract. This article focuses on agritourism as potential linkage between the national park administrations and the tourism industry that acts in the rural communities situated near the national parks, by investigating the level of development of the agritourism industry and by revealing tourists benefits after visiting the areas. The study was conducted in two national parks from Romania and the surrounding areas. Agritourism plays an important role for the rural communities located around the national parks since it is one of the main sources of revenues not only for guesthouse owners, but also for the whole community. Tourism indicators are determined to emphasize the evolution of the agritourism industry in both regions, while the contingent valuation technique was used to elicit information on tourists' hypothetical behaviour as regard to their visit to the national park and surrounding areas. The questionnaire was implemented during the summer of 2011 in Calimani National Park and Ceahlau National Park. The results indicate that agritourism can be considered as a potential linkage to maintain sustainability goals through a partnership between park managers and the tourism industry, in the case of the two analyzed national parks.

Keywords: agritourism, national park, sustainability, welfare measure

INTRODUCTION

Sustainable tourism development in national parks and surrounding areas has drawn the attention of many researchers due to its recognized value on both a national and international level. Researchers focused on the impacts of tourism development on local communities (Mayer *et al.*, 2010, Strickland-Munro *et al.*, 2010), the perceptions and attitudes of tourists toward tourism development in protected areas (Hearne and Salinas, 2002, Chaminuka *et al.*, 2011), the perception of residents toward tourism impacts (Perez-Verdin *et al.*, 2004, Hearne and Santos, 2005), the importance of involving stakeholders and establishing partnerships between protected area managers and the tourism industry (Cottrell and Cutumisu, 2006, Pfueller *et al.*, 2011).

Management actions undertaken at the level of the national parks have impacts of a certain extent on the local communities, particularly because many villages represent the main entrance points to the parks. The identification of positive and negative effects of tourism is a mandatory step in any management decision process. Positive impacts represent opportunities and emerge where tourism development is planned and managed in a sustainable way, whereas negative effects represent unwanted and sometimes irreversible consequences.

The International Union for Conservation of Nature has conducted a study on several protected areas with the aim of identifying the main positive and negative impacts of sustainable tourism development (Borges *et al.*, 2011). Findings revealed negative impacts such as visitor pressures when the increase in the number of visitors is not expected, congestion, heavy traffic, waste, air, noise and/or water pollution. Infrastructure is considered as exerting positive or negative impact, depending on the development process, whether it is unplanned and invasive or not. Improved conservation supported by revenues generated due

to the tourism activity, awareness of the area value, importance of protecting it and development of local communities were identified as positive outcomes. Beeton (2006) identifies a series of impacts that tourism development has on the local communities, such as: modification of the internal structure of the community, division of community in those who are in contact with tourists and those who are not, improvement of life quality through infrastructure development, as well as opportunities for women to be employed.

However, sustainability may be achieved and maintained only where a partnership between park managers and the tourism industry exists. Eagles and McCool (2004) emphasize that the linkage between local communities and park needs to be established in terms of economics, culture and policy.

Lately, efforts were made to develop and promote alternative forms of tourism with fewer negative impacts on the environment (Hearne and Salinas, 2002, Baral *et al.*, 2008). Ecotourism is probably the most popular form of tourism promoted in protected areas. It is considered to be a favourable solution since it combines tourism with nature conservation in a sustainable way. It also has a direct benefit on the economic development of local communities and educates tourists to be aware of the importance of maintaining the natural resources for future generations.

Although many studies discuss the benefits of agritourism to farmers and communities located around protected areas, there is a lack of research on this form of tourism in relation with protected areas. Therefore, this paper intends to investigate if agritourism represents a potential linkage to maintain sustainability goals through a partnership between park managers and the tourism industry. In Romania, agritourism is considered an important component of the tourism sector. In the last decade, the number of agritouristic boarding houses has increased significantly due to the European Union funding programs which encourage small farmers to continue the agricultural activity and to preserve the agricultural heritage and local traditions. The study has two main objectives: to investigate the evolution of agritourism industry in the rural areas around two Romanian national parks, and to identify the tourists' benefits after visiting the two Romanian national parks and surrounding areas, measured in terms of the willingness to pay (WTP) for visiting the areas.

MATERIALS AND METHODS

The study was conducted in two national parks from the North-East part of Romania and the surrounding areas. Calimani National Park covers 24,041 hectares and lies on four counties: Suceava, Mures, Harghita and Bistrita. The most visited part is located in Suceava County. The Calimani Mountains are the highest volcanic mountains in Romania (Pietrosul Peak 2101m) and as well as the biggest inactive caldera in Europe (10 km in diameter). The park is famous for the interesting shapes of the massive rocks - the 12 Apostles and the Red Stones, the large areas of natural ecosystems, the Swiss stone pine and juniper trees. A rich variety of wild plants and animals may be found, many being rare and/or vulnerable species. The most common recreation activities are hiking (6 trails), climbing and mountain biking. The number of tourists visiting the park is estimated around 1000; however, the process of monitoring is difficult since no entrance fee is required. Nowadays, the rural communities situated around the park are involved in agriculture, rural tourism, agritourism and forestry. Not too long ago, mining was another main activity which became inactive by law. Rural tourism and agritourism are encouraged by local authorities and national funding programs, especially because of the richness of traditions waiting to be preserved in the area.

Ceahlau National Park covers 7,742.5 hectares and is situated in the central part of the Ceahlau Massif, in the Neamt County. It is a relatively small area compared to other

parks, but very famous because of its unique landscape. The estimated number of tourists is 30,000, the majority taking visits during summer and religious holidays. An entrance fee is required to access and to camp inside the park. The large surfaces of forests, the numerous mountain peaks, the Duruitoarea waterfall, the rock formation Dochia are the most visited attractions. A rich biodiversity can be found here as well, including many endangered species. The most practiced recreation activities are hiking (7 trails), climbing, camping, nature observation and monastic tourism. With regard to the rural communities situated around the park, the main activities are subsistence agriculture, both crop and animal production, cement industry, wood processing, rural tourism and agritourism. However, the last two do not represent a priority for locals. The undeveloped infrastructure, the economy mainly based on subsistence agriculture, the lack of actions to promote traditions and the ageing of population are some of the negative factors that influence the development of the area.

Secondary data were collected from the National Institute of Statistics of Romania (INSSE) and used to analyze the evolution of the agritourism industry in the two studied areas over the 2000-2010 period. The analysis was conducted on agritouristic and rural boarding houses since no individual data has been available at national level since 2004. The evolution of agritourism industry was analysed using those tourism indicators that reveal information about the demand and supply for tourism in the studied areas (Tab. 1).

Tab. 1

Description of tourism indices

Index	Description
Bed-places	The number of beds-places in the establishments, determined by the number of persons who can stay overnight in beds set up in the establishments, ignoring any extra beds that may be set up by customer request
Bed-places available (places-days)	The number of days when the bed-places are actually available for use
Net occupancy rate of bed-places (%)	It is obtained by dividing total overnight stays by the product of total available bed-places and the number of days when the bed-places are actually available for use, multiplying the quotient by 100
Overnight stays	Number of all nights registered in the accommodation units, whether or not tourists were present in the rooms
Tourist arrivals	Number of person accommodated in the establishments
Supply of tourist accommodation (%)	It is obtained by dividing the available accommodation capacity to the number of bed-places multiplied by the number of days in the corresponding year, multiplying the quotient by 100
Average length of stay	It is obtained by dividing the number of overnight stays to the number of tourist arrivals

Source: After Kandari and Chandra (2004), Minciu (2005), Lupu (2010)

Primary data were collected to investigate tourists' benefits after visiting the areas using the contingent valuation method. A questionnaire was implemented in the two national parks and surrounding areas during the summer of 2011 on a random sample of tourists older than 18 years. A total of 206 visitors participated in this study, of which 92 visitors of Ceahlau National Park and surrounding areas and 114 visitors of Calimani National Park and surrounding areas. The contingent valuation method is the most popular stated preference method used to estimate the value of non-market goods (Champ *et al.*, 2003). The method requires the use of specific question formats designed to offer respondents hypothetical markets where they have the opportunity to decide if they would like to "buy" the good that is offered or not. The method has been widely used to reveal tourists' willingness to pay for trips to national parks (Boxal *et al.*, 2003, Lee and Mjelde, 2007, Rollins *et al.*, 2008). In this study, three single bounded dichotomous choice questions were addressed to respondents to estimate the willingness to pay per trip when the vehicle payment is an increase in travel

costs. The bid amount is represented by three levels of increases in the amount of money spent for transportation to reach the area in question. Thus, the panel includes three observations per individual. In the case of each individual, the bid amounts change among the set of three observations and the other variables remain the same. The random effects probit model is used for the estimation because it allows for a correlation between multiple responses of the same individual (Loomis, 1997). In a random effect probit model the respondent specific disturbance is included in addition to the disturbance associated with the model. The general expression for the random effects model is given by Greene (2003). The individual willingness to pay was computed according to the procedure used by Rollins *et al.* (2008), for each observation *i* from the data using the data and the estimated coefficients:

$$WTP_i = \frac{1}{-\beta_{WTP}} \cdot \left(\sum_{i=1}^N \alpha + \beta \cdot X_i \right)$$

where α is the intercept, β_{WTP} the estimated coefficient for travel costs and $\beta \cdot X$ the vector of cross products of remaining coefficients and independent variables.

RESULTS AND DISCUSSIONS

First analyses were performed to investigate the evolution of agritourism industry in the rural areas situated around the studied national parks, and more specifically of Neamt and Suceava Counties. The evolution of the agritourism industry was analysed using tourism indicators (Tab. 2, Tab. 3). Some tourism indicators were collected from the National Institute of Statistics from Romania and some were calculated according to the definitions given in Tab. 1. These indicators are also used by national authorities in establishing tourism development strategies at both national and regional levels.

Tab. 2

Evolution of agritourism supply indicators in Neamt and Suceava Counties

Indicator/ county/ year	Bed-places (places) ^a		Bed-places available (places-days) ^a		Supply of tourist accommodation (%) ^b	
	Neamt	Suceava	Neamt	Suceava	Neamt	Suceava
2000	152	245	28641	55803	51.62	62.4
2001	248	254	53625	68308	59.24	73.68
2002	291	463	58343	82562	54.93	48.85
2003	341	516	87699	98001	70.46	52.03
2004	343	691	95154	150427	76	59.64
2005	645	947	129102	213627	54.84	61.8
2006	742	1447	214113	323622	79.06	61.27
2007	877	1627	250351	365826	78.21	61.6
2008	980	1737	330257	380801	92.33	60.06
2009	1689	1738	470885	367151	76.38	57.88
2010	1639	1755	461932	366167	77.22	57.16
2011	1594	1968	473296	431906	81.35	60.13
2012	1757	2384	497309	544569	77.55	62.58

Source: ^aINSSE database, January 2012; ^bOwn calculation

Tab. 3

Evolution of agritourism demand indicators in Neamt and Suceava Counties

Indicator/ county/ year	Overnight stays (nights) ^a		Tourists arrivals (persons) ^a		Net occupancy rate of bed-places (%) ^b		Average length of the trip (days) ^b	
	Neamt	Suceava	Neamt	Suceava	Neamt	Suceava	Neamt	Suceava
2000	3646	3781	2738	2452	12.73	6.78	1.33	1.54
2001	3841	7783	1963	3902	7.16	11.39	1.96	1.99
2002	6243	16266	3623	8048	10.70	19.70	1.72	2.02
2003	9616	16468	5536	8107	10.96	16.80	1.74	2.03
2004	12531	25067	6314	11563	13.17	16.66	1.98	2.17
2005	18635	26271	11731	12197	14.43	12.30	1.59	2.15
2006	28348	45156	18473	20562	13.24	13.95	1.53	2.20
2007	38209	56543	24455	25547	15.26	15.46	1.56	2.21
2008	52442	54996	32829	26743	15.88	14.44	1.60	2.06
2009	65844	53801	40463	24320	13.98	14.65	1.63	2.21
2010	63231	51057	37310	23206	13.69	13.94	1.69	2.20
2011	71893	71323	45361	33920	15.19	16.51	1.58	2.10
2012	78970	102229	46149	38785	15.88	18.77	1.71	2.64

Source: ^aINSSE database, January 2012; ^bOwn calculation

Over the analysed period, the number of bed-places has increased significantly, especially after the year 2004. The increase can be explained by the European Union funding programs implemented in the rural areas through programs such as the Special Accession Programme for Agriculture and Rural Development (SAPARD) and the European Agricultural Fund for Rural Development (EAFRD).

An increase in the number of tourist arrivals has registered for both regions, suggesting that there is an increasing demand for trips in these areas, but not as expected by the guesthouse owners. The level of the net occupancy rate of bed-places is very low when compared to the level of supply of tourist accommodation, which is held by guesthouse owners at an unjustified level. Moreover, the supply of tourist accommodation in the Neamt County is very high when compared to the Suceava County, although the net occupancy rate of bed-places has about the same values over the years. The findings suggest that there is a lack of effective marketing in the tourism industry in both regions, which could be corrected, for instance, by establishing partnerships between guesthouse owners and the park administrations in promoting the areas.

For the analysed period, the average length of trips is around 1.66 days in Neamt and 2.12 days in Suceava. This result suggests that tourists prefer to take shorter trips to visit the areas. This information is important to guesthouse owners for offering tourism services that people would prefer during short trips, such as recreation opportunities, guided tours, and participation in several agricultural activities.

Secondly, the research was directed to identify the tourists' benefits after visiting the two national parks and surrounding areas, measured in terms of the willingness to pay for visiting the areas. In both samples, the proportion of male respondents is similar to female respondents. Half of the respondents visiting Calimani are older than 40 years, whereas 65.79% of respondents visiting the Ceahlau area are less than 40 years old. The majority of respondents have a university degree. Average monthly income per household is higher for

tourists visiting the Calimani area than the Ceahlau area. About one half of respondents were visiting the areas for the first time. The proportion of people staying up to 3 days and more than 3 days is similar in Calimani. This result may be explained by the increased number of guesthouses and recreation activities provided. In opposition, Ceahlau seems to be a park preferred for short trips up to 3 days (78.95%), this area being famous mainly for the recreation activities in the park and for visiting monasteries, which are not under the administration of the park authorities. About 86.05% of respondents chose to stay overnight in guesthouses situated around Calimani Park. This is a high percentage compared to Ceahlau, where only 55.26% of respondents chose this type of accommodation, the rest either choose to camp in the park or not stay overnight. Calimani Park is situated in one of the famous areas for rural tourism and agritourism, being highly encouraged and supported by the local authorities. Moreover, respondents expressed their positive satisfaction with the services offered. On the opposite it is to be found that the area around Ceahlau Park, where rural tourism and agritourism industry seem to stagnate, people prefer to visit the area only for religious reasons and opportunities to hike in the park. Surprisingly not only respondents are displeased with the services offered, but also local residents who are not directly involved in this industry.

Both areas are visited by people travelling from several parts of the country. Calimani is visited mostly by people who travelled for more than 150 km, while Ceahlau mostly by people who travelled less than 300 km. This result is explained by the unique features offered by the areas alongside the opportunities to hike on spectacular peaks and to observe nature. Calimani Park is well-known for the preservation of traditions in the rural areas around the park and Ceahlau Park for Dochia monastery which is situated on a high peak, where many people take pilgrimage trips. The main recreation activities are 'hiking' and 'rest and relaxation' for the majority of respondents (63.04% in Calimani, 78.95% in Ceahlau), thus, these two recreation activities are complementary.

The random-effects probit model was used to investigate the relationship between the binary dependent variable and the independent variables. Tab. 4 presents the description and statistics of each variable included in the model, for each separate park.

Tab. 4

Summary statistics and description of variables included in the model

Variable	Description	Calimani Park	Ceahlau Park
		Mean \pm SD	Mean \pm SD
Willing to pay	1 = 'Yes' response (Is willing to pay), 0 = 'No' response (Is not willing to pay)	0.40 \pm 0.49	0.58 \pm 0.49
Bid amount 1	Range from 3.20 to 30 RON in Calimani and from 1.50 to 20 RON in Ceahlau	12.99 \pm 7.06	8.25 \pm 4.44
Bid amount 2	Range from 8 to 75 RON in Calimani and from 3.75 to 50 RON in Ceahlau	32.48 \pm 17.66	20.62 \pm 11.09
Bid amount 3	Range from 16 to 150 RON in Calimani and from 7.50 to 100 RON in Ceahlau	64.97 \pm 35.31	41.24 \pm 22.18
Income	Income per household member (RON)	929.55 \pm 578.59	797.71 \pm 624.74
Age	Respondent's age (years)	37.50 \pm 12.27	35.87 \pm 11.15
Gender	1 = male and 0 = female	0.48 \pm 0.50	0.50 \pm 0.50
Education	1=less than 9 grades, 2=high school, 3=college/ university, 4=graduate school	3.09 \pm 0.75	2.89 \pm 0.79
Distance	Distance traveled from home (one-way)	297.54 \pm 144.97	195.32 \pm 109.52

Note: SD = standard deviation; September 2011 Exchange rate: 1 EURO=4.2309 RON

The first step was to investigate if there are differences among the two groups of visitors (Tab. 5). Model 1 was estimated for the whole data set, whereas Model 2 considering the interaction terms for each park. The likelihood ratio value of 79.83 exceeds the critical value of $\chi^2(7)$ of 14.07, for 5% level of significance, thus Model 2 is preferred over Model 1.

Tab. 5

Estimation results

Dependent variable: Yes/No response	Model 1	Model 2	Model 3
	Coefficient (Standard error)	Coefficient (Standard error)	Coefficient (Standard error)
Bid amount	-0.0537 (0.0114)***		
Bid amount_CA		-0.0693 (0.0190)***	-0.0717 (0.0197)***
Bid amount_CE		-0.0731 (0.0223)***	-0.0758 (0.0232)***
Income	0.0016 (0.0004)***		
Income_CA		0.0027 (0.0008)***	0.0028 (0.0009)***
Income_CE		-0.0001 (0.0005)	
Age	-0.0336 (0.0142)**		
Age_CA		-0.0872 (0.0304)***	-0.0888 (0.0315)***
Age_CE		-0.0145 (0.0201)	
Gender	-1.0522 (0.3498)***		
Gender_CA		-0.1282 (0.5178)	
Gender_CE		-1.7739 (0.5808)***	-1.8765 (0.6060)***
Education	-0.8541 (0.2544)***		
Education_CA		-1.1595 (0.4616)**	-1.1864 (0.4660)**
Education_CE		-0.8348 (0.3424)**	-0.8435 (0.3484)**
Distance	0.0033 (0.0015)**		
Distance_CA		0.0003 (0.0019)	
Distance_CE		0.0211 (0.0064)***	0.0208 (0.0062)***
Constant	3.6933 (0.9352)***		
CA_dummy		6.1085 (1.9432)***	6.0790 (1.9252)***
CE_dummy		2.2239 (1.1181)**	1.8837 (0.9735)*
No. of observations	618	618	618
No. of groups	206	206	206
Rho	0.7622	0.7666	0.7794
Log-likelihood	-321.3557	-281.4421	-281.7509
% correct predictions	70.06%	73.14%	73.62%

Note: Levels of significance are indicated as: ***=1%, **=5%, *=10%

CA = Calimani National Park and the surrounding areas; CE = Ceahlau National Park and the surrounding areas

However, not all estimated coefficients are significantly different from zero at the 10% level. The likelihood ratio test confirms that Model 3 is superior to Model 2, with a value of 0.62 below the critical value of $\chi^2(4)$ of 9.49, for 5% level of significance, meaning that Model 3 is preferred. This result is in accordance with previous valuation studies conducted on Romanian national and natural parks, which emphasize the uniqueness of the areas and the difference in tourists' preferences with regard to tourism (Dumitras, 2008, Dumitras *et al.*, 2011). A Similar procedure was performed by Boxall *et al.* (2003) when the analysis was conducted on more recreation sites at a time.

As expected, the probability of a 'Yes' response decreases as travel costs increase. Only some visit and visitor characteristics remain the significant determinants of the responses to the valuation questions. In case of the Calimani visitors, the decision is slightly positively influenced by the income level and negatively influenced by age and education level. In other words, tourists with higher income are WTP more, while older and higher

educated tourists are WTP less. In case of Ceahlau, gender and education influence the decision. Male tourists and higher educated tourists are WTP less. Distance is statistically significant only for Ceahlau, meaning that respondents who travel a longer distance are willing to pay more.

The estimated coefficients from Model 3 were used to calculate the median willingness to pay per trip for both groups. Median WTP is the price at which the probability of answering ‘Yes’ to the willingness to pay question equals 0.5. The comparative analysis emphasizes the difference between the two groups of tourists (Tab. 6).

Tab. 6

Median willingness to pay

Area	Median WTP
Calimani National Park and surrounding rural communities	24.15 RON
Ceahlau National Park and surrounding rural communities	33.95 RON

Note: September 2011 Exchange rate 1 EURO=4.2309 RON; 1 USD=2.9600 RON

Tourists seem to gain more benefits after visiting Ceahlau Park since they are WTP more (33.95 RON) than tourists who took trips in Calimani (24.15 RON). It is not surprising since it is probably one of the most known national parks in Romania, and tourists are visiting the area regardless of the quality of services provided by the guesthouses. The difference between the two groups can be illustrated graphically using the estimated coefficients with the sample data (Fig. 1). The increase in travel costs is represented on the horizontal axis and the estimated probability of a ‘Yes’ response to the valuation questions on the vertical axis.

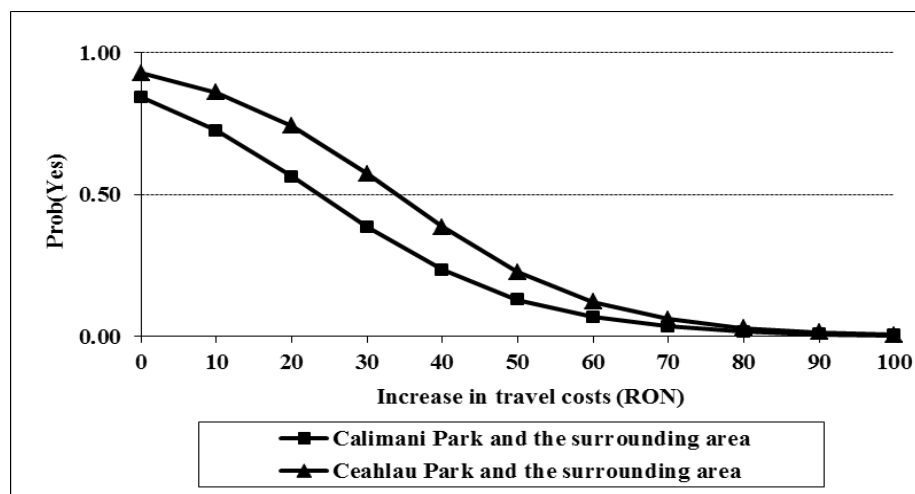


Fig. 1. Willingness to pay to take trips

The curves differ among the two groups for the whole range of values. The median WTP values can be found at the probability of 0.5. The WTP is higher for tourists visiting Ceahlau Park than for those visiting Calimani Park until the level of increase in travel costs reaches the threshold of 70 RON, where the probability of ‘Yes’ response tends toward zero.

CONCLUSION

The development of recreation opportunities in parks has definitely attracted tourists that visit not only the park, but the surroundings as well. There is no doubt that both park administrations are taking actions for sustainable tourism development by providing

recreation opportunities for tourists while conserving the natural resources. In both cases, the hiking trails have been recently remarked and the information boards were built at the entrance of the parks and on trails. Funds were drawn to protect the natural resources and many environmental projects are already finalized or on-going.

The results of the contingent valuation analysis indicate that the recreation opportunities provided by both park administrations are valued by tourists. The Ceahlau National Park and the surrounding areas were visited by tourists who are willing to pay 9.80RON more than those who visited Calimani National Park and the surrounding areas. This is an important result, particularly because the access to Ceahlau National Park is based on a ticket, whereas the access to Calimani National Park is free. It seems that an entrance fee does not influence tourists' decision to visit the areas. It may also contribute to the awareness of the value of the park. This result can justify the importance to introduce a fee system to access Calimani National Park, not only as an extra source of revenue for the park, but also as a valuable information to make people understand that the recreation activities in protected areas are allowed under specific rules and that the natural resources should be preserved for future generations as well.

However, the efforts of the park administrations for developing tourism in a sustainable way should be supported by the local communities, which should perceive tourism as a way to support them by generating revenues and job opportunities (Eagles and McCool, 2004). Moreover, the majority of tourists stayed overnight in guesthouses located in the communities situated around the parks. Rural communities situated around Calimani National Park provide better tourism services than those situated around Ceahlau National Park, as tourists confirmed informal discussions. The enthusiasm of guesthouse owner from Calimani is undoubted, as many tourists noted. The traditions are preserved by the majority of guesthouses owners, offering the possibility to taste traditional products and to be involved into the daily agricultural activities of the household. In opposition, tourists were not pleased with the tourism services received in Ceahlau, pointing that the owners do not show any interest in any improvements, being confident that the fame of the national park and of the monastery attract tourists, regardless of their efforts.

As Pfueller *et al.* (2011) states, a partnership between park administration and local authorities can be in the benefit of all. The implication of the authorities in developing a sustainable development strategy for tourism based on local traditions may increase the confidence and interest of residents to concentrate their efforts and improve the tourism services offered to tourists. The analysis presented here indicates that agritourism can be considered as an alternative form of sustainable tourism practiced in the local communities situated near parks. This form of tourism does not require excessive investment in farm infrastructure, the farm can use the existing resources, and the family members can be involved in the daily work (Tew and Barbieri, 2012). Moreover, agritourism can be perceived as a marketing tool and not only as a source of profits (Tew and Barbieri, 2012).

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