

RURAL TOURISM AS A VECTOR OF SUSTAINABLE DEVELOPMENT AND CONTRIBUTION TO THE CIRCULAR ECONOMY IN RURAL AREAS OF ROMANIA

POPESCU GABRIELA¹, POPESCU COSMIN ALIN², IANCU TIBERIU¹,
CIOLAC RAMONA MARIANA¹, ADAMOV TABITA¹, IOSIM IASMINA*¹,
OPRIȘOR OTILIA ECATERINA¹

¹*University of Life Sciences „King Mihai I” from Timisoara, Faculty of Management and Rural Tourism, Romania*

²*University of Life Sciences „King Mihai I” from Timisoara, Faculty of Agriculture, Romania*

*Corresponding author's e-mail: iasminaiosim@usvt.ro

Abstract: This paper explores the relationship between rural tourism and the circular economy, focusing on how sustainability principles can be applied in rural areas of Romania. The study aims to highlight the potential of rural tourism as a driver of sustainable development by promoting local resource use, waste reduction, and community engagement in circular economic practices. The work includes a theoretical analysis of the concepts of rural tourism and the circular economy, followed by a case study in the Apuseni Mountains region. The paper concludes with practical recommendations for policymakers, local entrepreneurs, and rural stakeholders, contributing to the development of a responsible and regenerative tourism model in Romania's rural areas. Rural tourism is at the intersection of local heritage preservation, sustainable economic development and community regeneration. In order to respond to contemporary challenges – depopulation, pressures on resources, climate change – an integrated model is needed that combines rural tourism with agrotourism, the capitalization of local resources and the principles of the circular economy. Such a model not only supports the local economy but also contributes to social cohesion and the preservation of cultural identity.

Key words: rural tourism, circular economy, sustainability, sustainable development, local communities

INTRODUCTION

In the current context of environmental crises, increasingly limited resources and the need for sustainable development, the circular economy is becoming a viable and necessary alternative to the traditional linear economic model.

Rural tourism, as a form of capitalizing on local potential in rural areas, proves to be a strategic sector that can contribute not only to economic development, but also to the protection of natural and cultural heritage. This paper aims to analyze rural tourism as a phenomenon and explore how it can become a catalyst for the transition to a circular economy, with applicability in rural areas in Romania.

Rural tourism is considered an alternative form of tourism, located in non-urban areas, that capitalizes on local natural, cultural and social resources. According to Lane (1994), rural tourism involves "visiting rural areas with the aim of experiencing traditional lifestyles, nature and local products".[4]

MATERIALS AND METHODS

The objectives of the paper refer to the analysis of the concept of rural tourism and its potential for sustainable development, the investigation of how rural tourism can integrate the principles of the circular economy, the study of the applicability of this model in rural areas in Romania, as well as the identification of good practices and the

formulation of recommendations for the sustainable development of rural tourism, which we will accomplish by applying the multi-criteria analysis method through existing information.

RESEARCH RESULTS

The circular economy is an economic model that aims to minimize waste and valorize resources through reuse, recycling, regeneration [3]. According to the European Commission (2020), [10,11] the circular economy applied to tourism involves the use of renewable resources, the reduction of packaging, the integration of short supply chains and the transformation of waste into resources.

Recent literature suggests that rural tourism has a natural potential for integrating circular principles, especially in small communities, where supply chains are short and contact with nature is direct [1]. Circular practices in rural tourism include:

- using local and seasonal foods;
- ecological architecture (passive houses, local materials);
- community involvement in production and consumption processes;
- educating tourists on sustainability [2].

Romania has a high potential for the development of rural tourism, but the integration of circular economy principles is still in its infancy. According to the National Institute of Statistics (INS, 2022), there are over 3,000 registered rural tourism units, but few of them apply circular strategies. Programs such as "Green Village", initiatives in Tara Hategului or Rosia Montana propose concepts of sustainable and circular tourism, but on a small scale. The need for a coherent policy framework is essential for scaling up [5]. The Apuseni Mountains are a mountainous region located in the northwestern part of Romania, with valuable tourist resources. Rural tourism in the area develops in various forms: agrotourism, ecotourism, cultural and adventure tourism. The area is known for: [9]

- remarkable biodiversity (Apuseni Natural Park),
- traditional villages with specific architecture (Rosia Montana, Scarisoara, Rimetea),
- actively preserved crafts and customs,
- landscape and cultural tourist potential.

Below we present an analysis of the situation of rural tourism in Apuseni, which includes:

- current data on tourism in the area
- local initiatives (guesthouses, eco-projects, associations)
- problems and potential for circularization

Rural tourism is present in various forms:

- agrotourism (accommodation in traditional households),
- ecotourism (hiking, speleology, cycling),
- cultural tourism (festivals, local traditions),
- adventure tourism (via ferrata, climbing, off-road).

According to INS and ANTREC, in 2022: [13,7,12]

- Over 600 guesthouses operated in the extended Apuseni area.
- The average occupancy was around 35-45% in the season.
- Most tourists come from Romania, but also from Hungary, Germany, and

France.

A series of problems and limitations are identified that refer to: poorly developed infrastructure in many villages, lack of waste management, dependence on seasonality and lack of diversification of services, limited tourism promotion, without a coherent "circular tourism" brand.

Table 1.

Numerical comparative analysis between Alba, Bihor and Cluj Counties

Indicator	Alba	Bihor	Cluj
Agritourism guesthouses	180	240	220
Annual visitors (thousands)	60	100	90
Share of rural accommodation (%)	65	70	60
Active tourist villages	28	35	30
Eco initiatives	6	9	7
EU funded projects	14	20	17

Source: Institutul Național de Statistică (INS), 2023

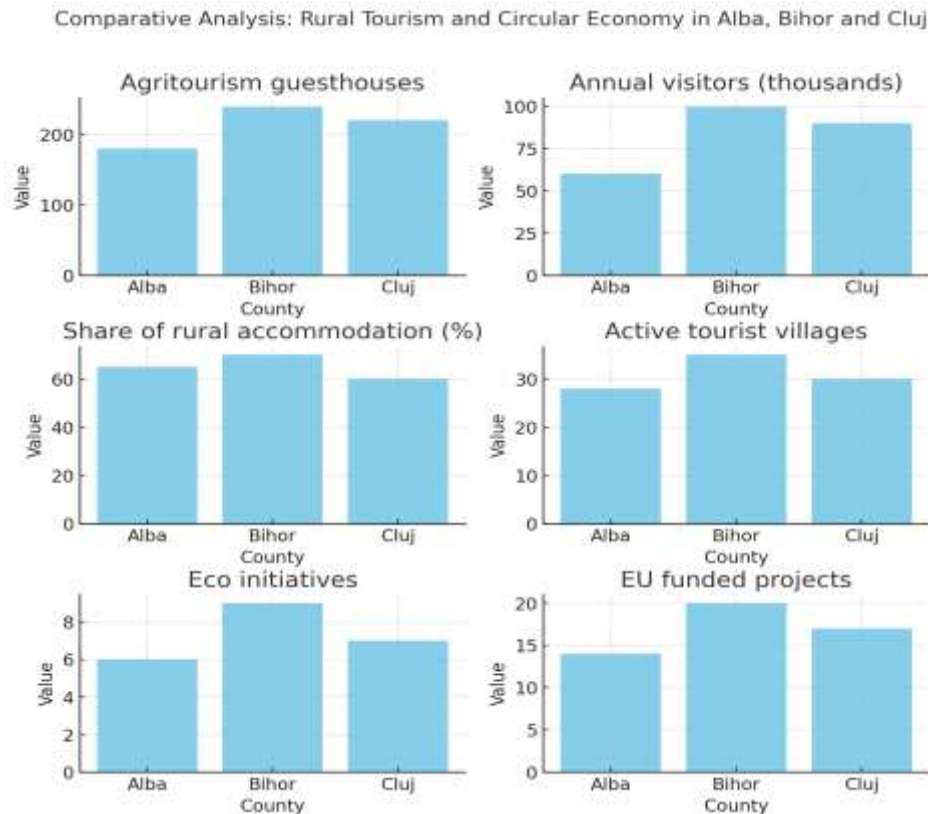


Figure 1. Comparative analysis: Rural tourism and circular economy in Alba, Bihor and Cluj Counties

Here are the numerical comparative analysis for Alba, Bihor, and Cluj counties, each representing a specific tourism-related indicator:

1. **Agritourism guesthouses** – Bihor leads with the most, followed by Cluj and Alba.
2. **Annual visitors (thousands)** – Bihor again has the highest number, indicating greater tourist inflow.
3. **Share of rural accommodation (%)** – Bihor shows the highest rural accommodation share.
4. **Active tourist villages** – Bihor stands out with more active tourist villages.
5. **Eco initiatives** – Bihor leads in eco initiatives as well.
6. **EU funded projects** – Bihor has the most EU-funded projects, followed by Cluj and Alba.

Each county has a different potential for integrating the circular economy into rural tourism:

- **Alba:** good for traditional tourism and heritage conservation – suitable for demonstration projects in remote villages.
- **Bihor:** excellent for active ecotourism and integrating tourism into protected areas.
- **Cluj:** advantaged by urban proximity, ideal for educational tourism and green transition initiatives.

We present the situation in the three counties below, in a graphic version, for better visualization. Each subplot presents a tourism-related indicator for Alba, Bihor, and Cluj counties, allowing for a clear visual comparison.

At the same time, some elements of the circular economy that are already (partially) present can be identified: [8,14,15]

1. Sustainable accommodation:
 - Guesthouses that use solar panels, local wood, dry toilets (e.g. Casa de sub Stanca – Vidra).
 - Buildings restored with traditional, non-polluting materials (e.g. Rimetea).
2. Short supply chain:
 - Most guesthouses offer locally cooked food, either their own products or from the village.
3. Reuse and recycling practices:
 - Some locations compost vegetable waste or reuse traditional objects.
4. Ecological education and responsible tourism:
 - Local guides promote responsible behavior towards nature (in the Ghețar – Scarisoara area).

Next, we will perform a SWOT analysis of the identified aspects.

Table 2.

SWOT Analysis – Rural Tourism & Circular Economy in Apuseni

Strengths	Weaknesses
Rich natural and cultural resources	Uneven tourism infrastructure
Living traditions, local crafts	Lack of separate waste collection
Hospitable communities	Lack of knowledge about the circular economy
Increased interest in ecotourism	Dependence on automobiles and fossil fuels
Opportunities	Threats
EU funding for sustainable villages	Overcrowding in peak season
Increasing demand for eco-tourism	Emigration of young people from villages
Development of local cooperatives	Environmental degradation without regulations

Although the circular economy is not systematically implemented in the Apuseni Mountains area, there are local initiatives that adopt its principles.

1. Rosia Montana Verde (Alba County): promotes a sustainable development model with organic agriculture, slow tourism and the preservation of local heritage.
2. Casa de sub Stanca – Vidra (Alba): eco-friendly guesthouse with spring water, electricity from solar panels, composting and local food.
3. Bihor EcoTour Association (Bihor): promotes eco-tourism routes and responsible guesthouses, with recycling, composting and local sourcing practices.
4. Rimetea Village (Cluj): traditional conservation by restoring houses with old materials, local consumption and cultural tourism with a minimal footprint.
5. Apuseni Wild Guesthouse (Bihor): promotes sustainable tourism, renewable energy sources and the involvement of the local community in the offer. These initiatives demonstrate the applicability of circular principles: reducing waste, reusing resources,

local consumption, using green energy and the active involvement of rural communities in sustainable tourism processes.

We have built a comparative analysis in the form of a table in which we compare the current situation of rural tourism in Apuseni from the perspective of: **existing countries, circular economy, integration opportunities and concrete recommendations.**

Table 3.

Comparative analysis – The situation of rural tourism in Apuseni

Current situation	Opportunities for integrating the circular economy	Concrete recommendations
Accommodation mainly in family guesthouses and rural households	Short supply chains, local consumption	Promoting local products in guesthouse menus, creating tourist cooperatives
Uneven tourism infrastructure (roads, utilities)	Implementation of green infrastructure (solar energy, composting)	Accessing European funds for sustainable infrastructure
Lack of efficient waste management systems	Composting of organic waste, local recycling	Creation of micro-selective collection centers in tourist villages
Growing tourist interest, but increased seasonality	Niche tourism throughout the year (eco, slow, cultural)	Development of thematic programs and seasonal tourist packages
Poor promotion of existing sustainable practices	Raising tourist awareness through storytelling and eco-labeling	Introducing an "Apuseni eco-tourism" brand for the units involved
The existence of isolated initiatives (eco-guesthouses, permaculture projects)	Scaling through local partnerships and replication in other villages	Local network of pilot "circular villages" - exchange of good practices
Low participation of young people in local tourism initiatives	Educational and entrepreneurial projects in the field of eco-tourism	Training and incentives for young rural entrepreneurs

Source: own interpretation

Table 4.

Comparative analysis between Alba, Bihor and Cluj Counties (rural tourism & circular economy)

Criterion	Alba	Bihor	Cluj
Suitable for	Cultural tourism, slow-tourism, isolated villages (e.g. Roșia Montană)	Ecotourism, speleotourism (Craiului Forest, Meziad Cave)	Combined rural-urban tourism, villages with quick access from Cluj-Napoca
Level of tourist infrastructure	Environment – many guesthouses, but difficult road access in some areas	Good – recent investments in roads and ecotourism centers	High – fast connection to cities, well-equipped hostels
Examples of eco practices	Accommodation in restored traditional houses, local renewable energy	Ecotourism visitor centers, thematic trails, eco guides	Households with solar panels, regenerative agriculture in some villages
Challenge	Rural depopulation, informal tourism	The need for integrated promotion, increased seasonality	Urban pressure on nearby rural areas
Circular initiatives	Community projects (e.g. Roșia Montana Verde), local gastronomy	Pensions with circular principles, NGO initiatives	Agrotourism farms that recycle, turn waste into compost
Potential for replicating the circular model	Raised in isolated traditional villages	Raised in protected natural areas	Raised in villages with good accessibility and educated public

One of the essential pillars of the circular economy is the reduction of waste and resource wastage. In rural tourism, this principle can be manifested by the use of composting systems for biodegradable waste, the reduction of single-use packaging and the elimination of non-recyclable plastic. For example, guesthouses in Apuseni such as “Casa de sub Stanca” use composting toilets and encourage tourists to bring reusable containers [9]. This approach not only reduces the volume of waste sent to landfills, but also contributes to the production of compost, which can be used in their own or community gardens.

Reuse is another fundamental strategy in the transition to circularity. In rural tourism, this principle translates into the preservation and refurbishment of old furniture or the use of traditional building materials (stone, local wood, clay). The village of Rimetea, Cluj County, is an eloquent example, where traditional dwellings have been restored with original materials, maintaining both the cultural identity and the sustainability of the buildings [5,6]. This practice preserves heritage and reduces the need for new raw materials, thus contributing to the local circular economy.

CONCLUSIONS

A central aspect of the circular economy in rural tourism is the local supply of food. Instead of extensive distribution chains, guesthouses can use products from their own household or from neighbors in the community, stimulating the local economy and reducing the carbon footprint associated with transportation. For example, in guesthouses in the Vidra or Garda de Sus area (Alba County), menus include cheeses, vegetables and honey produced in the village, which strengthens community resilience and promotes authentic tourism.

Circular tourism also involves the transition to renewable energy sources, reducing dependence on fossil fuels. In rural areas, this is possible by installing photovoltaic panels, solar batteries, but also by using local wood stoves, which, in the context of a sustainably managed forest, can become a renewable resource. Projects such as "Rosia Montana Verde" and "Apuseni Wild" have started to use these sources for lighting, heating and food preparation, demonstrating that energy autonomy is possible even in isolated villages.

A defining element of a functioning circular economy is the active involvement of the community. In rural tourism, this means that locals are not only providers of accommodation or products, but also guides, educators, artisans and promoters of local values. In Apuseni, local guides in areas such as Scarisoara cave or Padis offer tourists authentic experiences and contribute to educating them on responsible behavior in nature. At the same time, local events (fairs, craft workshops) integrate tourists into the local circuit of resources and values.

This paper aimed to analyze the relationship between rural tourism and the circular economy, with a focus on the applicability of this model in rural areas in Romania, through a case study focused on the Apuseni Mountains region. Following the theoretical analysis and applied research, the following conclusions can be formulated:

1. **Rural tourism** represents a sector with high potential in Romania, especially in mountainous areas such as the Apuseni, due to the natural landscapes, living traditions and hospitality of local communities.
2. **Circular economy**, as an alternative model of sustainable development, is compatible with the specifics of rural tourism, as it encourages the use of local resources, waste reduction and community involvement in production and consumption processes.

3. In the Apuseni region, there are already specific initiatives that apply circular principles (renewable energy, local products, traditional practices), but they are still insufficiently integrated and promoted as a general tourism development model.

Regarding the recommendations regarding the development of circular rural tourism in Romania, based on the conclusions obtained, we propose the following courses of action:

- **At the local level:** Training and supporting hosts to implement circular practices: composting, recycling, energy efficiency, short supply chains; Creating local partnerships between guesthouses, producers, artisans and NGOs for an integrated offer; Eco-labeling and certification of tourist locations that apply the principles of the circular economy.

- **At regional and national level:** Developing a national strategy on the circular economy in rural tourism, integrating best practice guides and financial incentives; Financing green infrastructure in rural areas through European funds (PNRR, EAFRD, etc.); Campaigns to educate tourists on the importance of sustainable choices in tourism.

- **At the academic and research level:** Developing tools for monitoring and evaluating circular performance in guesthouses; Encouraging interdisciplinary research on the relationship between tourism, circular economy and rural development.

We can say that rural tourism in Romania is in a moment of transition. The integration of circular economy concepts not only supports the sustainability of the rural environment but also offers a real chance for differentiation in the tourism market. If approached strategically, this model can transform Romanian villages into living centers of green innovation, where the future can be reborn.

REFERENCES

- [1]. GÖSSLING S., HALL C.M., 2019, Sustainable Tourism: A global perspective, Routledge
- [2]. HERNÁNDEZ-MOGOLLÓN J.M., DUARTE P.A., FOLGADO-FERNÁNDEZ J.A., 2018, The contribution of cultural events to sustainable rural development, Journal of Sustainable Tourism, 26(7), pp.1100–1118
- [3]. ELLEN MACARTHUR FOUNDATION, 2013, Towards the Circular Economy: Economic and business rationale for an accelerated transition, Ellen MacArthur Foundation, <https://ellenmacarthurfoundation.org/towards-the-circular-economy>
- [4]. LANE B., 1994, What is rural tourism? Journal of Sustainable Tourism, 2(1–2), pp.7–21
- [5]. RUSU G., STROE A., 2020, Economia circulară în turismul românesc: provocări și perspective, Revista de Economie și Turism, 13(2), pp.35–47
- [6]. SHARPLEY R., ROBERTS L., 2004, Rural tourism – 10 years on, International Journal of Tourism Research, 6(3), pp.119–124
- [7]. ***Autoritatea Națională pentru Turism (ANT). (2023). Raport anual privind unitățile de cazare turistică clasificate. <https://turism.gov.ro>
- [8]. ***Asociația Națională de Turism Rural, Ecologic și Cultural (ANTREC), 2022, Turismul rural în România – Ghid regional. <https://antrec.ro>
- [9]. ***Bihor EcoTour. (2023). Harta inițiativelor de ecoturism din județul Bihor. Proiect ONG local. <https://bihorecotour.ro>
- [10]. ***Comisia Europeană, 2020, Circular Economy Action Plan: For a cleaner and more competitive Europe.
- [11]. ***Bruxelles: European Commission. <https://ec.europa.eu/environment/circular-economy/>

European Travel Commission, 2022, Tourism and the Circular Economy: A focus on rural areas. ETC Report. <https://etc-corporate.org>

[12]. ***Eurostat, 2023, Tourism Statistics by Type of Region and Accommodation. <https://ec.europa.eu/eurostat>

[13]. ***Institutul Național de Statistică (INS), 2023, Turismul în România – date statistice 2022. București: INS. <https://insse.ro/cms>

[14]. ***Ministerul Dezvoltării, Lucrărilor Publice și Administrației (MDLPA), 2022, Programe europene pentru dezvoltarea turismului rural. <https://mdlpa.gov.ro>

[15]. ***Ministerul Antreprenoriatului și Turismului – Raport de activitate 2023